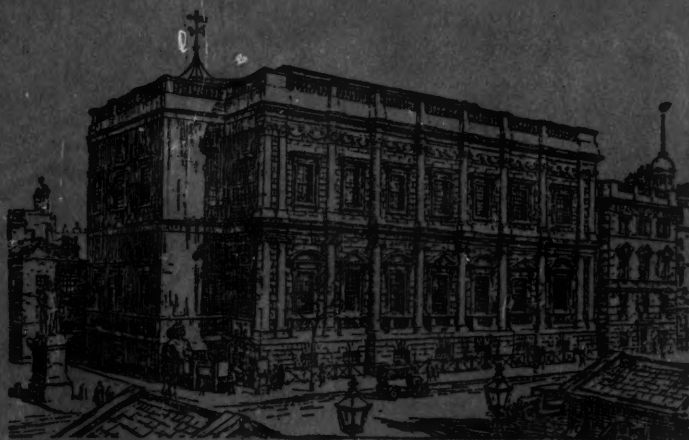


MAY 1948



# JOURNAL



## Royal United Service Institution

WHITEHALL, LONDON, S.W.1

ALL RIGHTS  
RESERVED

PUBLISHED  
QUARTERLY

*Price Seven Shillings and Sixpence*

Advertisement Manager

A. W. G. BAKRETT, 15 CHARTERHOUSE St., E.C.1. Telephone: HOLBORN 8655-6



**NEWTON & CO.  
LTD.**

(Established over 200 years)

*Specialists for*

**EPIDIASCOPES**

**DIASCOPES**

**FILMSTRIP DIASCOPES**

**FILM STRIPS AND SLIDES**

We can still supply the home market in limited quantities

*Full details from*

**72 Wigmore Street, London, W.1**

Telephone : WELbeck 7977 (4 lines)



**LIFE-BOAT FACTS**

**LIVES SAVED**

Over 75,000 lives have been saved since the Life-boat Service was established in 1824. An average of 11 lives per week. Help the life-boat men in this magnificent work by sending a contribution.

**ROYAL NATIONAL**

**LIFE-BOAT INSTITUTION**

**42, GROSVENOR GARDENS, LONDON, S.W.1.**

*The Duke of Montrose, K.T., C.B., C.V.O., V.D., Treasurer,  
Col. A. D. Burnett Brown, M.C., T.D., M.A., Secretary.*







# THE FAMOUS *Statichute* PACK

As used by  
the British  
and Allied  
Airborne  
Forces



DESIGNED BY

**G.O.**

*Parachutes of all types for all purposes*

G.O. PARACHUTE COMPANY LIMITED • STADIUM WORKS • WOKING • SURREY

## **INSURANCE IS ESSENTIAL TO ALL**

Do you require advice on any question of Insurance? The same type of Policy is NOT suitable for all cases: consult an expert before you commit yourself. Life, Motor, Fire, Burglary, etc., all dealt with. Have you considered providing for your retirement? Why not start a Life or Endowment Assurance NOW to cover the purchase of a house in the future? Life Assurance has many uses, including security for loans, and the younger you are, the cheaper it is.

You incur NO obligation or expense by an inquiry.

*Write or Telephone:*

**THE INSURANCE AND  
MORTGAGE ADVISORY  
BUREAU,**

**Nimmer, Chard, Somerset**

*Chard 2374*

## **JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION**

**7/6 QUARTERLY**

February, May, August, November

*Advertisement Rates:*

Whole page (*ordinary position*)

**16 guineas**

Whole page (*special and facing  
matter*)

**18 guineas**

Back page

**21 guineas**

All advertisements are subject to  
approval of the Council

*Enquiries should be sent to:*

**A. W. C. Barrett,**

15, Charterhouse Street, London, E.C.1

Telephone: HOLborn 8655/6

## **WHAT TO READ A LIST OF USEFUL LITERATURE FOR THE SERVICES**

Enumerating works on International Affairs,  
Imperial Defence, Higher Study of War  
Strategy, Combined Operations, Major Wars,  
Tactics and Weapons, Command and Staff,  
Science and the Services, Manning, Training,  
Morale, Uniforms.

Republished from the R.U.S.I. Journal

---

*Price 1s. 6d. Post Free*

---

Orders to the Secretary:

**Royal United Service Institution, Whitehall, S.W.1**



# THE WEAPON THAT BEAT THE PANZERS



Against a background  
of some of the toughest  
fighting of the war the Archer

made its first appearance. Basically, it consisted of the tried and proven Vickers Valentine tank chassis, with an armoured gunpit, housing the deadly 17-pdr, replacing the usual turret. Time and time again, the Archer proved itself to be a weapon not only of shattering fire-power but also of remarkable manoeuvrability. In the hands of Allied gunners on the muddy battlefields of the Italian and Western fronts, the Archer won acclaim as the weapon that beat the Panzers. The same skill in designing—the same technical ability—are helping to fashion the weapons of today with all the thoroughness that is the hall mark of a Vickers product.

**Vickers-Armstrongs**



**Limited**

VICKERS HOUSE, BROADWAY, LONDON, S.W.1

---

SHIPBUILDERS · ENGINEERS · AIRCRAFT CONSTRUCTORS

---



### BOSTOCK & KIMPTON LTD

Wine Merchants Specialising in Service  
to Naval Military and Air Force Messes.

56 HAYMARKET  
LONDON, S.W.1

Telephone  
Telegrams

ABBEY 1441/2  
Bostock, Lesqure, London

## G. D. ROBINSON LTD.

LICENSED VALUERS FOR PROBATE, ETC.

CLOCKS, ANTIQUE & MODERN,  
CHRONOGRAPHS, REPEATERS, BAROMETERS,  
ADJUSTED, REPAIRED OR REBUILT

URGENT WATCH REPAIRS: 48 HOURS SERVICE

REPAIR DEPARTMENT

UNDER THE PERSONAL SUPERVISION OF  
MR. C. F. C. LARSEN, 33 YEARS WITH  
MESSRS. CHARLES FRODSHAM

HIGHEST CASH PRICES FOR  
DIAMONDS, JEWELLERY, OLD GOLD  
ANTIQUE & MODERN SILVER PLATE

HOURS OF BUSINESS 9 a.m.-6 p.m.  
CLOSED ON THURSDAYS

5, IRVING STREET, LONDON, W.C.2  
TELEPHONE: ABBEY 4515

THE WORLD'S GREATEST BOOKSHOP

# FOYLES

★ ★ FOR BOOKS ★ ★

LARGE DEPT FOR NAVAL,  
MILITARY & AIR FORCE BOOKS

*New & secondhand Books on every  
subject. Stock of 3 million volumes.*

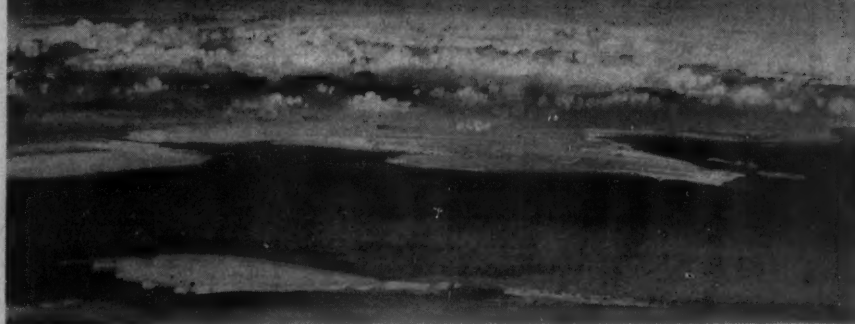
*We BUY Books & Foreign Stamps*

119-125 CHARING CROSS RD LONDON WC2

*Gerrard 5660 (16 lines) ★ Open 9-6 (inc Sats)*

## ELEVEN MILES ABOVE THE EARTH

Between 14.05 and 14.52 hours G.M.T. on March 23, 1948, Mr. John Cunningham ascended to 18133 metres, 59,492 ft., in a de Havilland Vampire fighter powered by a de Havilland Ghost turbine, thus establishing an international height record for aeroplanes, subject to confirmation by the Fédération Aéronautique Internationale





Thousands of girls and boys have, in the care of the Shaftesbury Homes and "Arethusa" Training Ship, received the education and moral training which has enabled them to give good service in the world. 240 boys are being trained in the Training Ship "Arethusa."

## **WILL YOU HELP THIS ONE TO BE A GOOD CITIZEN?**

Nearly 1,000 more are under the Society's care

### **THE SHAFTESBURY HOMES AND "ARETHUSA" TRAINING SHIP**

164, Shaftesbury Avenue, London, W.C.2

*Patron:* H.M. The King

*President:* Admiral of the Fleet, The Earl of Cork and Orrery, G.C.B., G.C.V.O.

*Chairman and Treasurer:* Francis H. Claytor, Esq., O.B.E.

*General Secretary:* F. Brian Pelly, Esq., A.F.C.

## **THE KINGS' ARMIES THROUGH THE AGES**

This illustrated booklet is  
a guide to the Dioramas  
in the Royal United  
Service Museum.

---

*Price 6d. Post Free*

---

Orders to the Secretary :  
Royal United Service Institution  
Whitehall, S.W.1

## **HISTORY OF THE BANQUETING HOUSE**

A brief history of the famous  
Banqueting House of the  
old Whitehall Palace, built  
for James I by Inigo Jones.

Now the Royal United  
Service Museum

---

*Price 6d. Post Free*

---

Orders to the Secretary :  
Royal United Service Institution  
Whitehall, S.W.1



# NAAFI and the Three R's

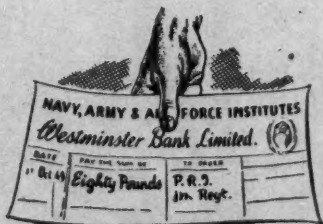
Refreshment . . . . Relaxation  
. . . . Revenue . . . . the three  
R's for which Naafi is famous. For  
Naafi serves the Services not only  
by providing the convenience of a  
well-planned, well-run canteen  
service . . . not only by supplying  
facilities for rest and recreation  
— but by affording a source of  
steady and substantial contribu-  
tions to the unit exchequer —  
earning funds needed to provide  
further Service amenities. Naafi  
has been organized to help the  
Services to help themselves. A  
great co-operative enterprise, it  
serves only those in the Services,  
applying its facilities — and all its  
profit — to the betterment of  
Service life and leisure . . .  
Help yourself — by patronizing  
Naafi.



REFRESHMENT



RELAXATION



REVENUE

# NAAFI

*The official canteen organisation for H.M. Forces in war and peace*

RUXLEY TOWERS · CLAYGATE · ESHER · SURREY



## R.U.K.B.A

THE  
ROYAL UNITED KINGDOM  
BENEFICENT ASSOCIATION

### Grants Annuities

without regard to religious denomination, to gentlemen of both sexes, who are over 40 years of age, incapacitated from earning a livelihood, and whose total means do not exceed £120 p.a. Annuitants are elected by the votes of Subscribers, or appointed by the Committee. Subscriptions and legacies gratefully received.

Full particulars from the General Secretary,  
R. U. K. B. A., Aldine House, Dept. M,  
13, Bedford Street, Strand, W.C.2.

### CONSULT

#### BRIG. M. L. HAYNE

(Indian Army Retired)

ON ALL MATTERS CONCERNING INSURANCE,  
PENSIONS, ANNUITIES, HOUSE PURCHASE  
MORTGAGES, ETC.

21 Bennett's Hill BIRMINGHAM 2 OR 448 Lichfield Road  
FOUR OAKS, Warwick

### ADVICE ABOUT EDUCATION

#### GABBITAS THRING & Co., Ltd.

EDUCATIONAL AGENTS

Broughton House,

6-8 Sackville Street, London, W.1

**NO CHARGE TO PARENTS**

### — BOOKS —

#### HUGH REES LTD.

Military, Naval and General Book-  
sellers, Stationers & Publishers

47, PALL MALL, S.W.1



### REMEMBER

Two Steeples No.83

quality when you want a  
good pair of socks.

FROM ALL HOSEIERS

## ARMY, NAVY & GENERAL

### ASSURANCE ASSOCIATION LIMITED

ESTABLISHED OVER FORTY YEARS  
BY SERVICE OFFICERS TO MEET  
SERVICE INSURANCE REQUIREMENTS

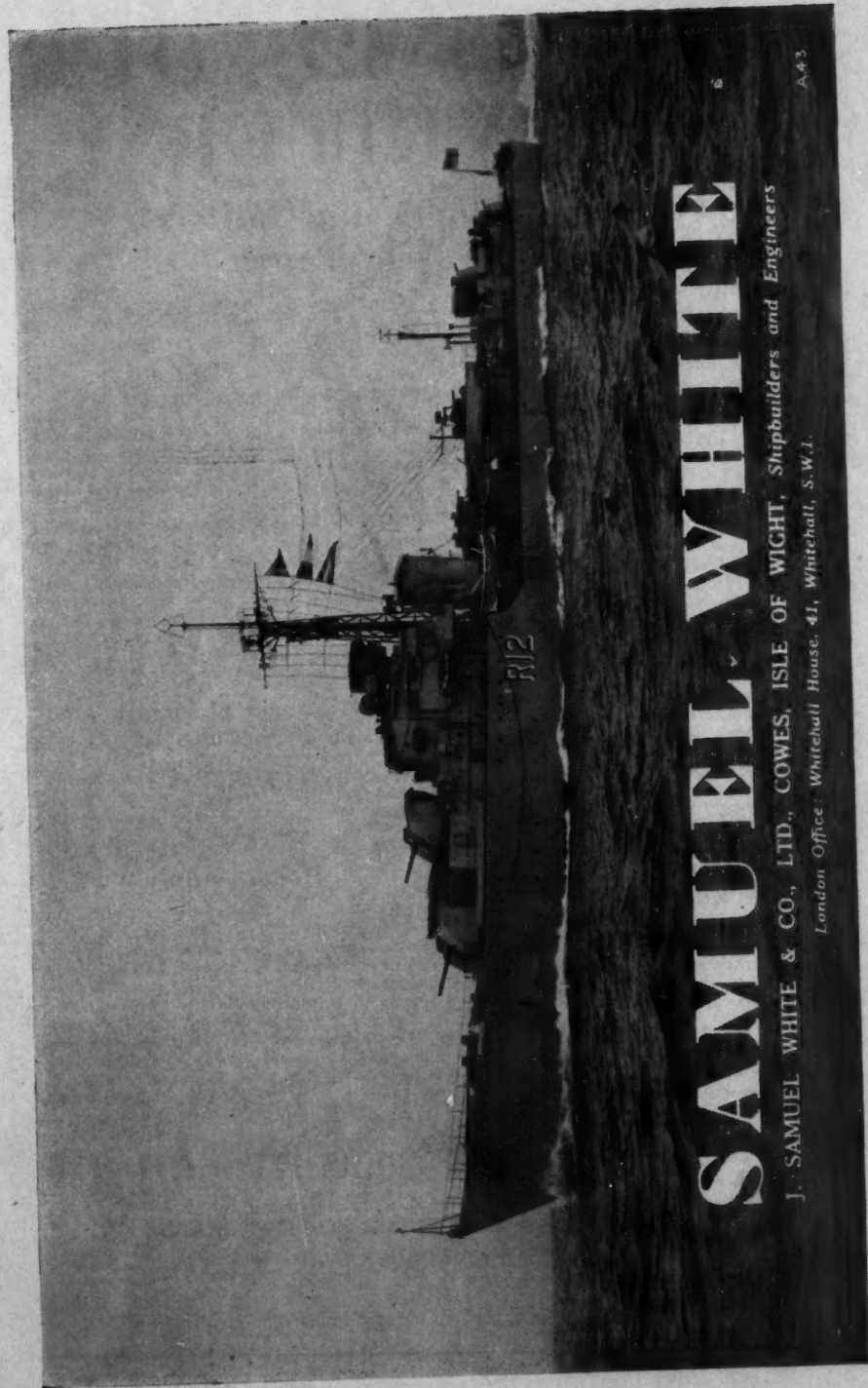
HOMES, PERSONAL ACCIDENT  
KIT & PERSONAL EFFECTS  
MOTORS

(33½% NO CLAIM BONUS)

YACHTS AND MOTOR BOATS  
MESS TROPHIES, HORSES, ETC.

TRAFALGAR HOUSE, WATERLOO PLACE, LONDON S.W.1

TELEPHONE : WHITEHALL 9917



# SAMUEL WHITE

J. SAMUEL WHITE & CO., LTD., COWES, ISLE OF WIGHT, Shipbuilders and Engineers

London Office: Whitehall House, 41, Whitehall, S.W.1.

A 43

# WHERE ARE OUR NEW WRITERS?

## *Panel of Authors and Editors To Guide New Talent*

**A**PPPLICATIONS are invited from men and women of all ages to enter the profession of authorship under the guidance of a panel of modern successful authors and editors formed to encourage and to direct new writers. All applicants must possess the urge to write and be prepared to devote at least a few hours of spare time a week to the successful new methods laid down by the panel of Authors and Editors.

### *The Panel of Authors*

(1) The Author of 1,000 short stories. (2) The Editor of a woman's magazine. (3) A star serial Writer. (4) The Author of Bessie Bunter. (5) A regular contributor to all the best-selling juvenile periodicals. (6) A Sunday Newspaper Feature Editor. (7) A National Daily Sub-Editor.

The creative instinct is of all things in life the most worthy of development and expression. There are many folk with the gift to see and record life in the routine around them, with natures sensitive to the humour, pathos and excitement of their experience, who with correct guidance quickly could be expressing themselves in well-paid articles and stories and, perhaps, making for themselves a lasting name in the world of letters.

### *Influence and Wealth—No Help Humble Education—No Bar*

There is a lesson all would-be writers must learn. It has usually only been acquired after long, painful experience. Now it can be learned quickly by those able and willing to profit from the crystallised experience of successful writers.

### *The Need for Direction*

There is to-day a great demand for good English fiction of all types. The shortage is so great that American fiction is invading the

English markets. If ever there was an opportunity for the new writer, and the writer who wishes to expand his field, it is here now.

The old method of selling stories has changed. New publications and periodicals are springing up almost week by week. There is no reason why anyone with a gift for expression and a feeling for words cannot almost immediately learn to use that gift and be paid handsomely for doing so. All that so many writers lack is direction on how and where to start, how and where to finish, and above all, where to sell. No ordinary friend can help. Prejudiced criticisms are no use. The Fleet Street School Ltd., has been formed by authors who are writing in Fleet Street to-day. They have learnt their lesson from experience. They know that a man must eat as well as write, that he must earn while he is learning as indeed they did themselves.

### *A Source of Income*

The new Course is far more than a course of study. From the very earliest lessons it must be producing saleable work and actually introducing the writer to his market. Special arrangements are available for those of limited means.

### *How to Apply*

All who feel that they can be helped by this Course, as described, and who feel their talent justifies the effort, are requested to apply for details of the new plan of writing to sell. Those who start now will have every opportunity to appear in print this year, if they have the necessary drive and ambition. The book, "The Prospects for Authorship," is sent under plain sealed cover without obligation. Please enclose 5d. in stamps for subsequent literature to conform with the Paper Control Order. Write to:



## THE FLEET STREET SCHOOL

(DESK K38) 6 TUDOR ST, FLEET STREET  
LONDON E.C.4

THE FLEET STREET SCHOOL LIMITED



# CONTENTS

MAY, 1948

	Page
Secretary's Notes	xi
Frontispiece: The Shape of Things to Come: Congreve's Rocket system in Fire Ships, 1814.	
Trench Gascoigne Prize Essay. By Wing Commander S. G. Walker, O.B.E., R.A.F.	177
Changes in Naval Warfare owing to New and Modified Weapons. By Lieutenant-Commander R. C. P. Wainwright, D.S.C., R.N.	187
Higher Command of the Armed Forces (Lecture). By Air Vice-Marshal E. J. Kingston-McCloughry, C.B.E., D.S.O., D.F.C.	195
Resistance Movements in the War (Lecture). By Major-General Sir Colin Gubbins, K.C.M.G., D.S.O., M.C.	210
The Strategic Bomber Offensive against Germany (Lecture). By Air Chief Marshal Sir Norman Bottomley, K.C.B., C.I.E., D.S.O., A.F.C.	224
German U-boat Design and Production. By Constructor Commander J. F. Starks, R.C.N.C.	240
The Royal Marines (Lecture). By General Sir Dallas Brooks, K.C.B., C.M.G., D.S.O.	259
The Effect of Air Power in a Land Offensive. By Air Chief Marshal Sir John Slessor, K.C.B., D.S.O., M.C.	268
Motor Transport. By Colonel L. D. Grand, C.I.E., C.B.E.	274
Administration and Training—The Company Commander's Problem. By Major R. C. W. Thomas, O.B.E.	276
A Conjuror Joins the Staff. By Lieut.-Colonel C. C. R. Murphy	280
The R.U.S. Museum. By the Secretary	283
The Supply Road to Russia. By "Sathi"	284
The Rio and Brussels Treaties. By J. M. Spaight, C.B., C.B.E.	290
International Situation:—	
The Western Union	294
South American Aggression	295
Palestine	297
Correspondence	299
General Service Notes	302
Navy Notes	304
Army Notes	316
Air Notes	325
Reviews of Books	333
Additions to the Library	336
Report of the Anniversary Meeting	342

THE FAIREY OPERATIONAL TRAINER



THE FAIREY  
OPERATIONAL  
TRAINER

already adopted by  
The Royal Navy,  
Royal Canadian Navy  
and Royal Netherlands Navy.

THE FAIREY AVIATION CO. LTD., HAYES, MIDDLESEX

London Office: 24 Bruton Street, London, W.1. Mayfair B791

JOURNAL  
of the  
Royal United Service  
Institution

*Published by Authority of the Council*

ALL RIGHTS RESERVED



Postal Address: Whitehall, London, S.W.1.

Telephone No: Whitehall 5854.

Telegraphic Address: "Russatus, Parl, London."

Vol. XCIII.

MAY, 1948.

No. 570

Advertisement Manager:

A. W. G. BARRETT, 15, CHARTERHOUSE STREET, LONDON, E.C.1.

Telephone: HOLBORN 8655/6.

# THE ROYAL UNITED SERVICE INSTITUTION

FOR

THE PROMOTION AND ADVANCEMENT OF THE SCIENCE AND LITERATURE  
OF THE THREE SERVICES.

## PATRON

HIS MAJESTY KING GEORGE VI.

## VICE-PATRON

H.R.H. THE PRINCESS ELIZABETH, K.G., C.I.

## PRESIDENT

General H.R.H. The DUKE OF GLOUCESTER, K.G., K.T., K.P., G.C.B., G.C.M.G.,  
G.C.V.O.

## VICE-PRESIDENTS

Air Chief Marshal Sir ROBERT BROOKE-POPHAM, G.C.V.O., K.C.B., C.M.G., D.S.O., A.F.C.

Admiral of the Fleet Lord CHATFIELD, P.C., G.C.B., O.M., K.C.M.G., C.V.O.

Admiral of the Fleet The Earl of CORK AND ORRERY, G.C.B., G.C.V.O.

Marshal of the Royal Air Force Sir EDWARD ELLINGTON, G.C.B., C.M.G., C.B.E.

Field-Marshal Sir CLAUD W. JACOB, G.C.B., G.C.S.I., K.C.M.G.

General Sir WALTER M. ST. G. KIRKE, G.C.B., C.M.G., D.S.O.

General Sir HARRY H. S. KNOX, K.C.B., D.S.O.

Brigadier-General The Earl of LUCAN, P.C., G.C.V.O., K.B.E., C.B., T.D.

## ELECTED MEMBERS OF COUNCIL

### Royal Navy

Rear-Admiral W. G. ANDREWES, C.B.E., D.S.O.

Admiral Sir HAROLD M. BURROUGH, K.C.B., K.B.E., D.S.O.

Commodore W. W. DAVIS, D.S.O., R.N.

Admiral Sir CHARLES J. C. LITTLE, G.C.B., G.B.E.

### Royal Marines

General Sir DALLAS BROOKS, K.C.B., C.M.G., D.S.O.

### Royal Naval Reserve

Commodore R. HARRISON, D.S.O., R.D., R.N.R.

### Royal Naval Volunteer Reserve

Captain REX JANSON, V.D., R.N.V.R.

### Regular Army

Lieut.-General Sir EVELYN BARKER, K.B.E., C.B., D.S.O., M.C.

Major-General R. G. FEILDEN, C.B., C.B.E.

Lieut.-General Sir JOHN HARDING, K.C.B., C.B.E., D.S.O., M.C.

Major-General J. C. O. MARRIOTT, C.B., C.V.O., D.S.O., M.C.

General Sir WILLIAM SLIM, G.B.E., K.C.B., D.S.O., M.C.

Field-Marshal Lord WILSON OF LIBYA, G.C.B., G.B.E., D.S.O. (*Chairman of the Council*).



### **Territorial Army**

Major-General IVOR T. P. HUGHES, C.B., D.S.O., M.C.

Brigadier J. A. LONGMORE, C.B.E., T.D., D.L.

Colonel F. D. SAMUEL, C.B.E., D.S.O., T.D.

### **Indian Army**

General Sir S. F. MUSPRATT, K.C.B., C.S.I., C.I.E., D.S.O.

### **Royal Air Force**

Air Chief Marshal Sir NORMAN BOTTOMLEY, K.C.B., C.I.E., D.S.O., A.F.C.

Marshal of the Royal Air Force Lord NEWALL, G.C.B., O.M., G.C.M.G., C.B.E., A.M.

(Vice-Chairman of the Council)

Air Marshal Sir JAMES M. ROBB, K.B.E., C.B., D.S.O., D.F.C., A.F.C.

### **Royal Auxiliary Air Force and Royal Air Force Volunteer Reserve**

Air Commodore F. Crerar, C.B.E.

### **REPRESENTATIVE MEMBERS**

#### **ADMIRALTY**

*Director of Tactical and Staff Duties* : Captain R. M. DICK, C.B.E., D.S.C., R.N.

#### **WAR OFFICE**

*Director of Staff Duties* : Major-General L. O. LYNE, C.B., D.S.O.

#### **AIR MINISTRY**

*Director of Command and Staff Training* : Air Commodore L. T. PANKHURST, C.B.E.

### **EX-OFFICIO MEMBERS**

*First Sea Lord* : Admiral of the Fleet Sir JOHN CUNNINGHAM, G.C.B., M.V.O.

*Chief of the Imperial General Staff* : Field-Marshal The Viscount MONTGOMERY OF ALAMEIN, K.G., G.C.B., D.S.O.

*Chief of the Air Staff* : Marshal of the Royal Air Force Lord TEDDER, G.C.B.

*Director-General of the Territorial Army* :

*President of the Royal Naval College, Greenwich* : Vice-Admiral Sir PATRICK BRIND, K.C.B., C.B.E.

*Commandant of the Imperial Defence College* : Air Chief Marshal Sir JOHN SLESSOR, K.C.B., D.S.O., M.C.

*Commandant of the Joint Services Staff College* : Rear-Admiral C. E. DOUGLAS-PENNANT, C.B., C.B.E., D.S.O., D.S.C.

*Director of the Royal Naval Staff College* : Captain R. M. J. HUTTON, C.B.E., D.S.O., R.N.

*Commandant of the Staff College, Camberley* : Major-General R. A. HULL, C.B., D.S.O.

*Commandant of the R.A.F. Staff College* : Air Vice-Marshal T. M. WILLIAMS, C.B., O.B.E., M.C., D.F.C.

### **HONORARY MEMBERS OF THE COUNCIL**

Major-General H. C. THACKER, C.B., C.M.G., D.S.O. (Canada).

Major-General A. J. BOASE, C.B.E. (Australia).

Major-General Sir A. H. RUSSELL, K.C.B., K.C.M.G. (New Zealand).

Field-Marshal The Right Hon. J. C. SMUTS, P.C., O.M., C.H. (South Africa).

Lieutenant-General H.H. The MAHARAJAH OF JAMMU AND KASHMIR, G.C.S.I., G.C.I.E.,

K.C.V.O., A.D.C. (India).

### **STAFF**

*Secretary, Editor and Chief Executive Officer* : Captain E. ALTHAM, C.B., R.N.

*Librarian* : Lieutenant-Colonel P. S. M. WILKINSON.

*Assistant Editor* : Colonel F. E. G. TALBOT, I.A.

*Curator and Assistant Executive Officer* : Captain J. H. LAING.

*Auditors* : Messrs. BARTON, MAYHEW & Co.

Alderman's House, Bishopsgate, E.C.2.

*Bankers* : ROYAL BANK OF SCOTLAND, DRUMMOND'S BRANCH,  
Charing Cross, S.W.1.

## THE INSTITUTION

The Institution is situated opposite the Haig statue in Whitehall. It provides Members with a comfortable reading room containing the leading papers, periodicals and principal Service (including foreign) Journals.

There is a Lecture theatre where lectures are given followed by discussions in which officers of every rank are encouraged to take part.

Members can obtain on loan four volumes at a time from the best professional library in the Country. They are provided with a free copy of the JOURNAL.

There is a private entrance to the celebrated R.U.S. Museum in the former Banqueting Hall of old Whitehall Palace.

## MEMBERSHIP

Commissioned officers of all H.M. Services, including those of the Dominions and Colonies, also Midshipmen of the Royal and Dominion Navies, the R.N.R., R.N.V.R. and R.N.V.S.R. are eligible for membership without formality.

Naval, Military and Air Force Cadets are eligible on the recommendation of their Commanding Officers.

Ladies whose names appear or have appeared in the official lists as serving or having served as officers in any of the three Services are eligible.

Officers' messes are not eligible for membership, but may subscribe to the JOURNAL.

## SUBSCRIPTIONS

The rates of subscription now in force are :—

	£	s.	d.
Annual Subscription	1	10	0
Life Subscription	24	0	0
or four yearly instalments of	6	6	0 each.
Covenanted Life Subscription—seven yearly instalments of	3	12	0 „

Full particulars of membership with alternative forms for bankers' orders, and for deeds of covenant enabling the Institution to recover income tax, can be obtained on application to the Secretary, R.U.S.I., Whitehall, S.W.1.

The JOURNAL is published in February, May, August and November. Copies may be purchased by non-Members, price 7s. 6d. Annual subscription, £1 10s. post free. Orders should be sent to the Secretary, Royal United Service Institution, Whitehall, S.W.1.

## MUSEUM

The R.U.S. Museum is open daily from 10 a.m. to 5 p.m., except on Sundays, Christmas Day and Good Friday. Members may obtain free passes for their friends on application to the Secretary.

H.M. Forces in uniform are admitted free.

## SECRETARY'S NOTES

### COUNCIL

#### Ex-Officio, Members

Rear-Admiral C. E. Douglas-Pennant, C.B., C.B.E., D.S.O., D.S.C., has accepted the invitation of the Council to become an ex-officio Member in his appointment as Commandant of the Joint Services Staff College.

#### NEW MEMBERS

The following officers joined the Institution during the period 5th February to 27th April, 1948:—

##### ROYAL NAVY

Lieutenant R. A. Lockhart Smith, R.N.  
Commander M. G. Saunders, R.N.  
Vice-Admiral R. H. Portal, C.B., D.S.C.  
Captain C. F. J. Lloyd-Davies, D.S.C., R.N.  
Surgeon Captain R. W. Mussen, M.D., B.Ch., M.R.C.P., R.N.  
Lieutenant K. P. Shallow, D.S.C., R.N.  
Captain J. D. Luce, D.S.O., O.B.E., R.N.  
Captain A. K. Scott-Moncrieff, D.S.O., R.N.  
Lieutenant-Commander M. R. Terry-Lloyd, S.A.N.F.  
Commander L. J. Pitcairn-Jones, D.S.C., R.N.  
Commander F. G. Hackforth-Jones, R.N.  
Lieutenant J. L. M. Joly, R.N.  
Commander David L. Pollock, R.N.V.R.  
Lieutenant-Commander (S) T. P. Gillespie, M.B.E., R.N.  
Commander G. J. A. Cross, R.N.  
Lieutenant J. F. Showell-Rogers, Royal Marines.  
Captain Caspar John, R.N.  
Instructor-Captain W. A. Bishop, O.B.E., M.A., R.N.  
Captain A. F. De Salis, D.S.O., R.N.  
Lieutenant-Commander H. C. Ewen, R.N.  
Lieutenant (E) G. B. Penn, R.N.  
Lieutenant-Commander I. M. Clegg, R.N.

##### ARMY

Major R. C. P. Jefferies, The Royal Irish Fusiliers.  
Major H. G. Croly, Royal Artillery.  
Major E. Clouston, R.A.S.C.  
Major B. R. Lewis Smith, Royal Artillery.  
Captain F. W. Woodward, Royal Artillery.  
Major P. Hodgson, 15th/19th The King's Royal Hussars.  
Captain Hon. J. F. H. Erskine, Scots Guards.  
Major N. P. D. Caldecott Baird, O.B.E., The Queen's Own Cameron Highlanders.  
Captain D. J. Martin, The King's Own Royal Regiment.  
Lieut.-Colonel C. F. Rivett-Carnac, 10th Baluch Regiment, I.A.  
Brigadier H. H. V. Christie, M.C., T.D., 81 A.A. Brigade (T.A.).  
Captain D. E. White, The Durham Light Infantry.  
Lieut.-Colonel J. Austin, O.B.E., R.A.S.C.  
Captain D. V. S. Burroughs, 351 L.A.A. Regiment, R.A. (T.A.).  
Major N. O. Quinn, T.D., The Border Regiment.  
Lieutenant J. A. Gallie, 303 Regiment E.A.A., R.A.  
Major N. L. Dodd, Royal Artillery.  
Major John Fletcher, M.B.E., Royal Engineers.

Captain E. J. Frost, Royal Artillery.  
Major J. M. Sawers, Royal Signals.  
Major T. F. S. Christopher, Royal Artillery.  
Brigadier P. G. C. Preston, D.S.O., 162nd Independent Infantry Brigade (T.A.).  
Major G. G. Simpson, The Royal Inniskilling Fusiliers.  
Major E. J. C. Spanton, M.B.E., The Manchester Regiment.  
Captain J. E. Tye, Royal Artillery (Field).  
Captain S. A. Watt, Royal Artillery.  
Major R. B. Williams, The Royal Lincolnshire Regiment.  
Captain E. W. Anstey, Royal Tank Regiment.  
Captain D. C. Brierley, R.H.A.  
Major R. K. Constantine, R.A.O.C.  
Major P. D. Denman, I.A.  
Major-General Sir Arthur A. B. Dowler, K.B.E., C.B., Director of Infantry, W.O.  
Captain N. L. Lambert, Royal Artillery.  
Senior Commander M. K. Marsh, A.T.S.  
Major J. R. M. Butler, M.V.O., O.B.E., Intelligence Corps.  
Major Guy Cassie, The Argyll & Sutherland Highlanders and Royal Pioneer Corps.  
Captain A. G. Comer, The Welch Regiment.  
Captain J. O'Brien, R.E.M.E.  
Captain R. L. Perkins, The Royal Leicester Regiment.  
Lieut.-Colonel H. F. Rook, Royal Engineers.  
Brigadier Brian Daunt, D.S.O., 105 Coast Artillery Brigade, Royal Artillery (T.A.).  
Captain P. N. Grove, The York & Lancaster Regiment.  
Major H. G. W. Hamilton, M.B.E., Royal Engineers.  
Captain A. D. Milne, The East Surrey Regiment.  
Captain C. G. B. Fotheringham, The Cameronians (Scottish Rifles) T.A.  
Major W. S. Brownlow, The Rifle Brigade.  
Major R. M. Kershaw, The Royal Northumberland Fusiliers.  
Colonel P. D. Fabin, M.B.E., The Loyal Regiment.  
Major C. L. Ackerley, M.C., Royal Artillery.  
Major D. G. Armstrong, R.A.S.C.  
Major William Quinn, M.C., Royal Artillery.  
Captain P. W. Seeney, Royal Artillery.  
Captain A. J. Woolford, M.C., Royal Artillery.  
Major C. Hetherwick, M.C., late The Argyll & Sutherland Highlanders.  
Captain E. J. Beale, Royal Signals.  
Captain A. H. Turnbull, R.A.S.C.  
Lieutenant R. G. Morris, Royal Tank Regiment.  
Captain R. D. Raikes, Royal Artillery.  
Captain F. Wilcox, M.C., The Royal Scots.  
Major R. L. Hargroves, The South Staffordshire Regiment.  
Captain D. F. A. T. Baines, Royal Artillery.  
Senior Commander S. C. Puckle, A.T.S.  
Captain R. N. Topham, The Wiltshire Regiment.  
Lieut.-Colonel V. Stevenson-Hamilton, 4th (P.W.O.) Gurkha Rifles.  
Captain T. N. W. Lacey, Royal Artillery.  
Lieut.-General G. N. Molesworth, C.S.I., Colonel 4/15th Punjab Regiment.  
Captain E. W. Bradley, The Royal Inniskilling Fusiliers.  
Major J. A. I. Fillingham, 2/6th Gurkha Rifles, The Gurkha Regiment.  
Captain John Hopkin, The Royal Welch Fusiliers.  
Lieut.-Colonel W. H. Mabbott, M.B.E., 12th Royal Lancers.  
Captain J. P. D. Mullaly, Royal Signals.  
Captain D. E. B. Salmon, The Welch Regiment.



Major N. James, M.B.E., R.A.O.C.  
 Captain W. T. Morrison, The South Lancashire Regiment.  
 Captain J. G. Harrison, The King's Royal Rifle Corps.  
 Major D. J. Willison, M.C., Royal Engineers.  
 Captain K. W. Brown, The Duke of Wellington's Regiment.  
 Captain F. S. Jeffreys, The Welch Regiment.  
 2nd Lieutenant G. E. Dent, 12th Royal Lancers, R.A.C.  
 Major D. A. Gilchrist, The Devonshire Regiment.  
 Captain I. R. Courtney, Royal Artillery.  
 Major J. M. Kneen, R.E.M.E.  
 Lieutenant J. F. De Symons Lewis-Barned, The Queens Own Royal West Kent Regiment.  
 Captain E. R. Strologo, 49 Anti Tank Regiment, Royal Artillery.  
 Major V. A. J. Heald, D.S.O., M.C., The Dorsetshire Regiment.  
 Lieut.-Colonel F. H. Towill, The Border Regiment, T.A.R.O.  
 Lieutenant D. D. Champion-Jones, The Queen's Royal Regiment.  
 Captain J. R. C. Elmslie, Royal Tank Regiment.  
 Lieutenant T. Hope, The Devonshire Regiment.  
 Captain R. F. Nixon, The King's Royal Rifle Corps.  
 Major S. N. Floyer-Acland, The Duke of Cornwall's Light Infantry.  
 Lieutenant D. R. Large, The King's Regiment.  
 Captain R. G. C. Taylor, M.C., The York & Lancaster Regiment.  
 Captain H. W. Alden, M.C., The Essex Regiment.  
 Captain J. A. G. Le Coq, The King's Royal Rifle Corps.  
 Major J. Le Hunte, late The Hampshire Regiment.  
 Lieut.-Colonel W. C. O. Phibbs, O.B.E., Royal Engineers.  
 Captain E. O. Prothero, The Royal Hampshire Regiment.  
 Captain A. D. S. Stevens, The Royal Sussex Regiment.  
 Captain R. C. Taverner, The Welch Regiment.  
 Captain J. B. Denham, Scots Guards.  
 Captain J. B. Buckmaster, The Royal Hampshire Regiment.  
 Captain F. J. J. Worth, The Wiltshire Regiment.  
 Captain J. H. G. Parfett, Royal Engineers.  
 Colonel R. Atkinson, O.B.E., M.C., T.D., Royal Artillery (T.A.).  
 Captain P. Sherston-Baker, M.C., Royal Artillery.  
 Captain B. C. Bovey, Royal Signals.  
 Major A. V. Brooke-Webb, Royal Artillery.  
 Major J. E. C. Stedham, R.A.S.C.  
 Captain J. G. R. Allen, Royal Tank Regiment.  
 Major R. N. Deane, M.C., The South Wales Borderers.  
 Captain E. T. Greaves, 1st The Royal Dragoons.  
 Major I. S. Keelan, M.C., Royal Engineers.  
 Brigadier A. G. V. Paley, D.S.O., O.B.E.  
 Captain T. E. St. Aubyn, The King's Royal Rifle Corps.  
 Captain K. R. Thompson, The Queen's Royal Regiment.  
 Captain M. F. R. Bullock, The Devonshire Regiment.  
 Captain W. B. Wilton, M.C., R.A.P.C.  
 Major P. Andrews, R.E.M.E.  
 Lieut.-Colonel W. G. Petherick, 3rd Hussars.

#### ROYAL AIR FORCE

Wing Commander H. M. Pinfold, R.A.F.  
 The Revd. G. W. Norris Groves, Asst. Chaplin-in-Chief, Air Ministry.  
 Squadron Leader V. W. Hinkley, R.A.F.  
 Squadron Leader T. C. Gates, R.A.F.

Flight Lieutenant S. F. Kettell, R.A.F.  
 Flight Lieutenant D. H. C. Nixon, M.B.E., R.A.F.  
 Flight Lieutenant H. Fishwick, R.A.F.  
 Flight Lieutenant C. V. G. Usher, R.A.F.  
 Squadron Leader H. E. Campbell-Orde, R.A.F.  
 Squadron Leader P. J. Duncan, D.F.C., A.F.C., R.A.F.  
 Group Captain R. J. Legg, R.A.F.  
 Flight Lieutenant W. F. Adams, R.A.F.  
 Wing Commander J. Clift, O.B.E., D.F.C., R.A.F.  
 Squadron Leader H. Bamforth, R.A.F.  
 Flight Lieutenant R. P. Cummins, R.A.F.  
 Squadron Leader I. J. Cadwallader, R.A.F.  
 Squadron Leader J. T. Morris, R.A.F.  
 Flight Lieutenant D. A. Casley, R.A.F.  
 Group Captain M. F. Calder, R.N.Z.A.F.  
 Squadron Leader P. A. Hughes, D.F.C., R.A.F.  
 Squadron Leader J. E. R. Vosper, R.A.F.  
 Flight Lieutenant H. Clark, R.A.F.  
 Squadron Leader V. F. Clarke, R.A.F.  
 Wing Commander K. T. Nicklin, O.B.E., R.A.F.  
 Group Captain C. W. Pollock, R.A.F.  
 Flight Lieutenant A. Boonham, R.A.F.  
 Lieut.-Colonel C. Gey van Pittius, S.A.A.F.  
 Squadron Leader H. Jacob, R.A.F.  
 Flight Lieutenant H. W. Reeves, R.A.F.  
 Squadron Leader F. Vernon, M.B.E., R.A.F.  
 Flight Lieutenant J. Howell, R.A.F.  
 Group Captain A. N. Combe, A.F.C., R.A.F.  
 Squadron Leader J. L. Nunn, D.F.C., R.A.F.  
 Squadron Leader, J. L. Mitchell, M.V.O., D.F.C., R.A.F.  
 Flight Lieutenant J. A. Reed, R.A.F.  
 Flight Lieutenant C. N. Spurdens, D.F.C., A.F.C., R.A.F.  
 Squadron Leader L. F. Styles, R.A.F.  
 Flying Officer R. J. Guerrier, R.A.F.V.R.  
 Squadron Leader F. L. Dodd, D.S.O., D.F.C., A.F.C., R.A.F.  
 Flight Lieutenant H. N. Kitchin, R.A.F.  
 Squadron Leader B. F. Stannard, R.A.F.  
 Squadron Leader J. M. Gilchrist, M.B.E., R.A.F.  
 Squadron Leader A. R. Williams, R.A.F.  
 Flight Lieutenant D. P. Boulnois, R.A.F.  
 Squadron Leader W. R. Assheton, D.F.C., R.A.F.  
 Squadron Leader H. R. Hall, D.F.C., R.A.F.  
 Flight Lieutenant R. W. Marshall, R.A.F.  
 Squadron Leader S. J. Rawlins, R.A.F.  
 Squadron Leader D. F. Dixon, R.A.F.  
 Flight Lieutenant A. H. Gibb, R.A.F.  
 Flying Officer W. W. Felstead, R.A.F.  
 Squadron Leader F. D. Hughes, D.S.O., D.F.C., R.A.F.  
 Squadron Leader A. Hughes, D.F.C., R.A.F.  
 Flight Lieutenant R. C. G. T. Rogers, R.A.F.  
 Flying Officer M. Juppenlatz, R. Aux.A.F.  
 Group Captain G. F. Alexander, O.B.E., R.A.F.  
 Wing Commander M. G. McNama, R.A.F.  
 Squadron Leader H. D. Campbell, R.A.F.  
 Flight Lieutenant R. G. Chapman, R.A.F.  
 Flight Lieutenant O. E. Willis, R.A.F.

Flight Lieutenant J. F. M. Wright, R.Aux.A.F.  
 Flight Lieutenant J. H. Spencer, R.A.F.  
 Wing Commander A. L. Cornford, R.A.F.  
 Squadron Leader N. G. N. Davis, R.A.F.  
 Squadron Leader H. F. O'Hara, R.A.F.V.R.  
 Squadron Leader A. Reece, D.S.O., D.F.C., A.F.C., R.A.F.  
 Squadron Leader W. G. Morgan, O.B.E., R.A.F.  
 Flight Lieutenant A. H. Brenack, R.A.F.

### INCREASE OF SUBSCRIPTIONS

As from the 1st January, 1948, the rates of subscription were increased to :—

Annual Subscription	... ..	£1 10 0
Life Subscription	... ..	£24 0 0
or four yearly instalments of	£6 6 0 each	
Covenanted Life Subscription—Seven		
yearly instalments of	£3 12 0 each	

Annual Members who have not yet instructed their banks are requested to do so without delay. If they ask, they can be supplied with new bankers orders, in which event they are requested to send the requisite remittance to make up the amount due for the current year at the same time.

Members who are in process of paying their Life Subscriptions by yearly instalments are not called upon for any increase.

### COVENANTED SUBSCRIPTIONS

The Council hope that many more Members will support the Scheme for Covenanted Subscriptions, details of which have been circulated to all Members.

This materially assists the Institution because it enables Income Tax at the full current rate to be reclaimed on each subscription.

To date 1,266 Annual and 561 Life Members have signed the necessary Deeds.

Any Member who has not received his copy of the Scheme or who requires new forms is requested to communicate with the Secretary.

### LIAISON OFFICERS

The following changes have taken place in the list of Liaison Officers published in last quarter's JOURNAL :—

NAVY	
<i>Establishment or Command</i>	<i>Name</i>
R.N. College, Greenwich ... ..	Lieutenant-Commander J. K. Hamilton, R.N.
R.N. Barracks, Portsmouth ... ..	Lieutenant-Commander H. A. Stuart-Menteth, D.S.C., R.N.
R.M. Barracks, Eastney ... ..	Major E. A. Allenby, R.M.
Mediterranean Station ... ..	Lieutenant-Commander A. P. W. Northey, D.S.C., R.N.
Third Commando Brigade, R.M. ... ..	Major V. A. J. Heald, D.S.O., M.C.

### ARMY

A.A. Command ... ..	Lieut.-Colonel G. P. Gregson, D.S.O., M.C.
Western Command ... ..	Major R. B. Hodgkinson, M.C.
Northern Ireland District ... ..	Major G. P. Rickcord, D.S.O.

### ROYAL AIR FORCE

Fighter Command ... ..	Flight Lieutenant P. G. Leggett.
Maintenance Command ... ..	Group Captain J. H. Powle, O.B.E.

### TRENCH GASCOIGNE PRIZE ESSAY COMPETITION, 1948

The subject for this competition is :—

"In peace time our fighting Services have to be reduced to a level to which they cannot hope to meet every threat to our extended Commonwealth. How can we ensure that our limited forces have the maximum effect as a deterrent to war?"

Full particulars were issued in a leaflet circulated in the February JOURNAL. Copies can be obtained on application.

### MUSEUM

#### GIFTS

Pocket signal book which belonged to James Fichat, Royal Marines, 1778-1826 (9365). Given by J. E. W. Boyes, Esq.

Badge issued in 1940 to the Flag Officer-in-Charge, Tyne, to be used in the event of invasion, by the military authorities. (9366). Given by Captain E. W. Swan, V.R.D., R.N.V.R.

Statuette of a Private of the City Imperial Volunteers. (9367.) Given by Sir Herbert Creedy, G.C.B., K.C.V.O.

Model of a "Bombardon." (9368.) Given by Lieutenant-Commander R. Lochner, M.B.E., R.N.V.R.

Relics of the atomic bomb damage in Hiroshima and Nagasaki. (9369.) Given by Group Captain A. C. Dark, C.B.E., R.A.F.

Ships Badge of H.M.S. "Starling." (9370.) Given by Commander M. L. Hardie, D.S.C., R.N.

Hull model of a Fire and Rocket ship of 1814. (9371.) Purchased.

#### LOANS

Set of German model soldiers with arms, armour and vehicles. Lent by Lieut.-Colonel J. S. Blunt.

### COLLECTION OF REGIMENTAL BADGES

It is desired to complete the Collection of Regimental Badges with specimens of Officers' Badges, particularly those of the post-1914 pattern. Will Members having any to spare please send particulars of them to the Curator.

### JOURNAL

Members are invited to offer suitable contributions for the JOURNAL. Confidential matter cannot be used, but there is ample scope for professional articles which contain useful lessons of the War; also contributions of a general Service Character, such as Strategic Principles, Command and Leadership, Morale, Staff Work, Naval, Military and Air Force history, customs and traditions.

The Editor is authorized to receive articles from serving officers, and if found suitable, to obtain permission for their publication from the appropriate Service Department.

Army Officers are reminded that such articles must be accompanied by the written approval of the author's Commanding Officer.

### REQUEST FOR BACK NUMBERS

The Editor will be grateful for any copies of the JOURNAL for August and November, 1947, with which Members may have finished, in order to meet applications for these numbers.

### CHANGES OF ADDRESS

Members are particularly requested to notify any change of address which will affect the dispatch of the JOURNAL.

#### Naval Officers' Addresses

Naval Officers are strongly advised to keep the Institution informed of their address as JOURNALS sent to them via C.W. Branch of the Admiralty are invariably greatly delayed.



h  
n  
"  
es

6

of  
O.,

ert

er,

by

lie,

ut.-

s of  
any

tial  
tain  
h as  
and

able,  
t.  
itten

mber,  
these

affect

ddress  
reatly



THE SHAPE OF THINGS TO COME  
CONGREVE'S ROCKET SYSTEM IN FIRE SHIPS, 1814  
*From an old publication in the R.U.S.I. Library*

# **THE JOURNAL**

*of the*

## **Royal United Service Institution**

**Vol. XCIII.**

**MAY, 1948.**

**No. 570.**

[Authors alone are responsible for the contents of their respective Papers.

All communications, except those for perusal by the Editor only, should be addressed to the Secretary, Royal United Service Institution.]

### **TRENCH GASCOIGNE PRIZE ESSAY, 1947**

By WING COMMANDER S. G. WALKER, O.B.E., R.A.F.

#### **SUBJECT**

**Discuss by what means the best of the Nation's manhood can be attracted to a career in the Armed Forces of the Crown**

**E**VER since the last war ended, the Service Ministries have been confronted with two diametrically opposed problems. The first is how to return to civil life the millions of men and women who saw service in the Armed Forces of the Crown during the period of emergency. The second is how to retain in the smaller armed forces of the future the best of the men already serving and how to attract the best of the nation's young manhood into permanent and semi-permanent service in the future. For more than two years these two vital problems have had to be tackled side by side, but the time has now come when the enormous task of demobilization is all but completed, and the other task, lesser in size but not in quality, may be brought to the centre of the stage. In this examination of the problem it is intended to concentrate attention on this second task, to draw its outlines, review its various aspects in some detail, and put forward suggestions for its successful solution. Little or no reference is made to the past, much less to the distant future. The keynote is the present and the time factor is paramount.

#### **THE PROBLEM**

Before we can start any review of the methods to be adopted to attract the best of the nation's young manhood to the profession of arms we must appreciate and accept one all-important factor—the size of the armed forces a nation like ours can afford to support. And having agreed on their limitations, we must examine the scope available to any young man in such forces—the scope which is the vital outlet to ambition, the reward for ability, and the prospects so necessary to all who plan their futures.

Throughout history we have found this nation able to maintain only a small standing Army and Navy. In fact, we have wanted it like that, so that our manpower and brains and energy could be devoted almost entirely to trade—the making of money by the production and exchange of goods. Once again after a major war, the nation is virtually bankrupt, the people are exhausted and the plans for recovery contain only reductions in the size of the fighting Forces. Once more these Forces

must take a back seat in the nation's affairs. International political tension, as demonstrated to the World by U.N.O., has so far, however, prevented the controllers of our destiny from not allocating a seat at all. And Service planners, in close conjunction with other interested Government departments, are now seeking to streamline the Forces down to small, highly efficient and highly trained bodies, composed of enthusiastic and contented men, serving, for the most part, on a voluntary basis in the arms of their choice.

Conscription may or may not be a passing phase—a nightmare to some, a nuisance to others, but a political necessity to all. One of the advantages gained from conscription, however, is that it brings into contact with Service life many young men, acceptable for longer service, who might otherwise never contemplate a Service career and are now given the opportunity of trying it without committing themselves. But we cannot devote too much of our attention to conscripts *qua* conscripts. Our quarry is the young man who is on the threshold of life and is undecided on a career, and the conscript who comes forward for his period of service with an open mind as to his future. To every young man comes this problem—one of life's tragedies—of having to decide on a career, from which there may be no withdrawal, at a time when he is inexperienced in the World, untried among men and, perhaps, prone to being over-influenced by a dominating parent or guardian. It is this young man—alert, intelligent and eager to prove his worth, to whom we must address ourselves in our efforts to recruit only the best into the Services.

Having agreed that it is only a small fighting force which the nation can afford, and having appreciated the type of young man to whom we shall address our blandishments, we must finally decide on the period of time touched by our review. The past is dead and gone. We are not here to chronicle the failures and the successes in past methods of recruiting and retaining the men in our Services. They are a matter for naval and military history. The future is shrouded in uncertainty. After the fog of war, the dank mist of peace. The Atomic Age—and we stand on its threshold—gives us pause for thought but, when we think, very little vision is vouchsafed to us. We get no further than postulated generalities and hypothetical sequences. There are so many "ifs" and "buts," and there is the far from remote possibility that the actual Service man as we have known him will be replaced by the scientist—the Boffin, by then much multiplied, who will wage his war with press buttons, rays and radio. No—it is the present that we must study, the need for to-day and the next two to five years.

This problem is not merely one of recruiting. It goes further than that, for the aim must be not only to attract the newcomer but also to retain the best of those already serving on short term engagements. This is certainly a problem for the present and the immediate future, for it is the start of the re-birth, the re-orientation of Service life in peace time, that will count. These are the years when we shall run into our greatest difficulties and which are, therefore, all the more demanding of our attention. Now is the time when we must lay the foundations of the methods we shall adopt, and within five years they should have been tried and tested, should be firmly accepted and operating smoothly and the stage should be all set for a steady intake of the best of the nation's young manhood.

In drawing the outlines of the problem, we see that its many aspects fall into two main divisions—the intangibles and the tangibles; the psychological and mental aspects on one side and the material aspect and "creature comforts" on the other.



## INTANGIBLE CONSIDERATIONS

As surely as we know that there are material aspects to every problem of choosing a career, so surely do we also know that there are some psychological and mental problems too. Loyalty and friendship, honour, obedience and discipline are intangibles. The spirit of a body of men, the success or otherwise of man-management, the happiness and the worth of men in Service life—all these, also, are intangibles. To look more closely at these is of interest in this review and we can deal with them not in any degree of priority but as each seems to fall into its correct sequence.

## THE ESTIMATION OF THE PUBLIC

Perhaps the most important of the psychological factors which would attract a young man into the Services is the position he will attain in the life of the nation—his status in the community. It was Kipling who told us that Tommy Atkins was a much despised and harshly treated character so long as the sword was sheathed, but when the drums began to roll he rapidly became all kinds of a hero and the darling of the crowd. Many people used to regard—and still do regard—the Army as the refuge of the dull-witted sons of the upper classes who were quite incapable of any other profession. We are very proud of the fact that we are a peace-loving nation and that attention to the art of war is not one of our pastimes. We have confirmed this by grossly underpaying our fighting men, by indulging in roars of laughter at any cheap music-hall joke at the expense of our officer corps, and by allowing a belief to be built up that soldiering was an idle life for misfits among the civil population and a safe job for the scum of the Earth. Sailing the seas in the King's ships received little better appraisal, though fortunately for the Royal Navy, its repeated deeds of rescuing and/or safeguarding the nation from mortal peril occasionally placed it on a higher level in the esteem of the people.

While this attitude towards our Services may be duplicated in peace time in other countries, it certainly never existed in France nor in Germany—in their day two of the greatest Continental military Powers. In Germany, which produced a magnificent military machine, over the last 150 years the professional soldier had a surer place in the life of the community than in any other country. The rank and file, though not necessarily loved or highly respected, were certainly not despised or vilified. The officer corps was largely composed of the best of the nation's manhood—with brains and ability in the majority instead of the minority, as with us. Whatever the shortcomings of their system, the German Army has twice quite recently had Europe at its feet. The politicians, not the Generals, failed to turn that fact to good account.

All this of course applies readily to a country bent on conquest and relying on its armed forces to bring it glory and a "place in the sun." But, in some part at least, it could apply equally to any country, particularly to one striving to maintain, in peace, small, highly efficient, streamlined forces on which could be built the larger national forces required in time of emergency.

We must radically change our national attitude towards our Armed Forces in peace. With the greater use of highly technical equipment, the complexities of modern logistics, the increase in the problem of man-management in our more educated and more politically-conscious Forces, we need better men all round. If we are to get them, they must not be treated as men who have not earned the right to live equally well in civil life as they do in Service life, as men who have not the strength or ability to stand up to the rigours of the civilian trades and professions. They must

be set at their true level and be accepted, wherever they go, at that level. Financial remuneration and prospects, which we shall deal with later, will be the chief tangible means of achieving this, but it is itself an intangible something which must be introduced into the national conduct and outlook. It will not be easy to put over with the people at large, who have been fed on the very opposite ideas for years enough, except when they go in fear of their lives. There are means, however, by which this can be brought about and they should not be neglected but operated unceasingly. For instance, the value of propaganda is never properly appreciated in this country. We have only recently, and then through war, made fuller use of films and radio education to put across to the public matters of national importance. This question of the prestige and value of our Services needs putting over in the same way, and by every possible means—steadily, unremittingly and in ways seen and unseen.

Vast expenditure of public money is not required. It is the minor points of psychology which pay the best dividends. Only recently have we realized the value of allowing Service personnel beyond the recruits and trainee stage to wear mufti off duty on almost all occasions. Only recently have we realized that a young man requires more than lip service paid to his efforts to better himself in his academic and technical education by giving support to courses in learning and by giving young men every opportunity to receive a high standard of tuition. People talk of the lack of education in the Services; precious little has been done to remedy this. Plans to alter uniform and accoutrements to conform more with the modern and improving attitude towards Service personnel are only now coming to light. Add to these the plans for improved living conditions and recreational facilities, and it is clear that some cognisance has been taken of the over-all psychological value of these material things, which will be mentioned again later. But more is required and still more.

#### FAILURE OF A SYSTEM

Over all these measures for the improvement of life in the Services, however, there still lies the clammy hand of a system which taints all Government service with its disadvantages and mental conflicts: it is the system of "dead man's shoes," the disregard of ability in favour of length of service. No matter how much some may protest that this is not true of the fighting Forces, it repeatedly manifests itself and particularly when it touches promotion and advancement. At this time, when all three Services are settling down to a stabilized peace-time existence, when all ranks are finding their new levels for the future, there is more bitterness, more disillusion and more anger at the awards of substantive rank than has ever been known before. Senior N.C.O.s., some of whom have reached all but temporary Warrant rank, are being reverted to Corporal. Officers, who by their ability, energy, obvious "know how," and qualities of leadership have in the emergency been singled out and given added responsibility and increased temporary promotion, now find themselves down amongst their less conscientious and definitely less able contemporaries, many of whom now attain seniority purely on the age factor. It has been said that selection for promotion will be dealt with under four main headings—service record, length of commissioned service, degree of experience, and age. In the event, it was age and age alone which decided the fate of many of our able and brilliant young officers—and for the worse. Thus in the very heart of our permanent officer corps we have a canker which will require more than promises to excise it from that vital body.

Much the same has happened with the rank and file, and the fact is well known, not only within the Services but in all places where Service men move—in their homes, among their friends and relatives, at their old schools and in their clubs and

associations in civil life. This is not a fillip to recruiting. This is no encouragement to the young short-period soldier to re-engage or extend his service. It is the writing on the wall, the sure sign that the slow tedious life of the Services—some call it the idle, waiting game—is back again. When a man knows that no matter how hard he works at his job, no matter how extra-qualified he may be, no matter how excellent his general record may read, he will not be advanced any quicker than the average man of the same age, and much slower than the less able but more elderly of his contemporaries, much of the fire is taken out of his efforts and much of the spirit of ambition is smothered.

There seems to be a horror of promoting an officer, either commissioned or non-commissioned, at an early age. What is the reason? What is this talk about the Treasury not being able to get the required length of service out of the individual to justify granting a pension? Why should not a man attain high rank at an early age and continue to serve in it so long as he remains efficient, able, and worthy of his appointment? Wellington was not 33 when he was gazetted a Major-General in 1802. Napoleon was in his middle twenties when he attained an equivalent rank; and did he not have considerable success with a score of young Marshals and Generals in his immortal armies? In the present Century, however, when the British Army was confronted with the First World War, more than one of its aged commanders died or otherwise became unfit for command before we had come to grips with the enemy. In the Second World War the Russians led the way with young Generals—many in their early thirties, an example which was rapidly followed by the British and Americans, particularly in the air and on the staffs.

Now, why does it seem to follow that a brilliant young commander, or a first-class young staff officer, or an excellent and outstanding young N.C.O. in time of war, invariably loses his brilliance, his ability or his excellence, once we revert to peacetime conditions? Why must men who have been proved capable and efficient in times of stress and when responsibility was readily taken and decisions to be made were important and frequently vital, why must these men revert to junior ranks and lose seniority because they are young? This is a stigma on a Service career—"dead man's shoes"—a very sound and undeniable reason why the nation's best will not even consider entering the Forces on a permanent basis but would rather seek their reward in industry and the professions; for there the able and hardworking young man at least stands a chance of breaking to the surface at any time in his career, and not simply at some period when his birthday coincides with the demands of a soul-destroying system.

So the second major step to be taken is to stamp out this misbegotten natural child of the liaison between bureaucracy and financial expediency and throw open the gates of promotion to our young men, irrespective of their age. There are promotion boards and selection boards which can safeguard any abuse of this system, and if any young man can prove by his record and his ability that he is fit for Warrant rank or full Colonel's rank in his early thirties, or for Petty Officer or Sergeant or Lieutenant-Commander or Squadron Leader in his middle twenties, good luck to him. And if he spends ten to fifteen years in that rank and maintains the high standards which originally earned him the advancement, so much the better. If he does not, then he could just as readily be reverted to a lower rank or be removed altogether. If our Services are to be highly efficient they must be highly disciplined in the moral and personal planes. The competitive element must be fostered and controlled, and inefficiency must be ruthlessly punished.



## THE WORTHINESS OF THE CAUSE

Having examined the two most serious intangibles—the national attitude to the Services in peace and the dead-hand methods of reward for effort, let us now look at a lesser, though equally important, mental aspect of the problem.

Is the profession of arms a worthy one? Is the steady increase in cool, calculated scientific methods of killing likely to induce an increase in the number of its devotees; or can we divorce this basic reason for a Service life, this preparation for defence in emergency, from the more mundane and infinitely more useful duties, the completion of which encourages technical efficiency and other professional qualifications? Can we easily expect a young man to spend his life servicing and maintaining machines of war without any thought as to their purpose; or to deal with the endless routine of administration without some reflection on its purpose in the over-all scheme of things? These are questions which must pass through the minds of the intelligent young men who contemplate a Service career to-day. Do they really want to expend energy and vital brain power in the learning and practice of an art which, in all conscience, is wholly unproductive in its ultimate execution, and the significance of which they have failed to grasp?

What can be done to reassure the young man? On this score only one thing: he must be made aware that despite its apparent unproductiveness, Service life can train him, not only for a trade or other civilian occupation, not only in character and general mental development, but also for a great work, a great cause, should the need arise. The best way to achieve this is to educate the youth of the nation in the value of the fighting Forces, which in turn will increase the respect of the public for those Forces. This brings us back to our first point—the need to establish the Services in a position of respect and affection in the community as a whole. Then the young men in the Services, themselves, need information on the historical and political significances of the role of the Forces in the nation's life.

Concurrently, the young men already in the Services, particularly those conscripted, must be shown that the way of life in the Services is improving, that a tightening of discipline is matched by an increase of privileges, that there are improvements in living conditions, uniforms, equipment, training methods, overseas drafting and control of a man's time. They must be helped to see and appreciate the value and meaning of esprit-de-corps, morale and discipline, and generally imbued with the spirit of the worthiness of their cause.

## THE TANGIBLE ASPECTS

In these days of false values and near-inflation, the material aspects of a Service life loom large in a young man's imagination. They need not be regarded as the only aspects considered by a prospective recruit to any trade or profession; indeed, with the type of man the Services are now seeking, much attention will no doubt be given to the intangibles we have just reviewed. But there are these more matter-of-fact, more urgent aspects and they are as important to-day as ever they were.

## PAY AND REWARD

If the public's attitude towards Regular Service personnel is perhaps the most important intangible, the material reward for services rendered is easily the most important tangible aspect of this problem. There are very few men to-day, educated or otherwise, who do not place this consideration near the top in their choosing of a career. In fact, we can safely accept that the consideration of remuneration is



normally the paramount one in the choice of an occupation, sad though this may seem. The young man grows up in an environment of competition, both academically and physically. On leaving school or college he has probably already decided on his future. This decision is based on precedent in his family, on personal wish after a period of contemplation of the prospects, on parental influence, or on sheer necessity. But whichever is the basis of the decision, every one is coloured in some degree or other with the consideration of financial reward. This is weighed carefully and deliberately for each possibility, no doubt concurrently with an appreciation of the advantages and disadvantages of each.

Do we pay our fighting Forces adequately? Are we rational in all our thoughts in this direction? Does the pay of technicians and administrative workers in the Forces compare favourably with their civilian counterparts? Is there any Service equivalent of bonuses and overtime pay? Are the Chiefs of our fighting Forces paid as much as the heads of our public corporations? The answer to all these questions, representative of a score that could be asked in the same theme, is No! Throughout history we have grossly underpaid our fighting men, particularly our highly trained and skilled officers and senior N.C.Os. With any business on a similar scale there is no comparison, and to suggest that by the taxing of allowances the Services would be brought more into line with the civilian population was adding insult to long standing injury. But it was done, and in the recent White Paper laying down the new pay code for the Services, more than one rank, commissioned and otherwise, lost, not gained, in the final analysis.

The unskilled labourer in civilian occupation to-day is paid 85/- per week. This is more than a fitter, a man with apprenticeship training and a highly skilled trade, receives in the Services. Even the "payment in kind" does not make up for the irrational disparity between the two. In time of emergency, in war, it is the civilian who collects the fat wage packet while the serving man plods on at his pre-war rates, a poor second to the "essential worker." Is not the fighting man an "essential worker" when the nation is at war? Some countries recognize this fact, particularly some of the Dominions and the U.S.A., and the fighting man suffers nothing, financially and in perquisites, on changing into uniform.

So if we are to attract the best we must pay—if not the best, then certainly more than the third or fourth best which is paid to-day. The skilled man, qualified and adept at his trade, finds industry beckoning, and he will not stay in the Services unless induced, beyond all question, by financial rewards. For the young man, qualified or not, the same applies, and the nation's "Cinderella"—the Services, holds little or no chance against industry and other civil occupations on the up-grade. For the nation to-day has work for all and in that work, productive and creative, there is money to be made.

#### TRAINING

The apprentice training in the Services is regarded, and rightly, as of the highest order. Graduates enter into man service justifiably proud of their qualifications and basic training and anxious to increase their knowledge and efficiency. Much the same can be said of the older men who pass through the various training establishments before being fully mustered in their trades and classified in their rankings. But it is only very recently that certain Trade Unions have accepted basic training in the Services as adequate qualification for full membership and grading in civil life trades. Trade Unionism is becoming an intrinsic feature of the national life and it is

important that such agreements should be extended to cover not only all Service trades with civil equivalents, but also all degrees of Service training and gradings achieved. At the same time, the standard of training must be raised still higher, particularly outside the recognized schools and colleges engaged in apprentice training. Properly qualified instructors engaged on full-time instruction should receive additional pay for this work. Part-time instructors, with the necessary qualifications often gained by study and effort beyond the normal line of duty, should also be paid instructors' pay and encouraged in every way.

Under the heading of Training we may also deal with the question of professional qualifications—degrees, diplomas, licences, etc. The practice of encouraging young men in the Services to study by correspondence courses and subsequently qualify by examination is all too limited. Great extensions should be made in this direction, so that an ambitious young man may continue his studies and, if and when the necessity arises, align himself alongside his counterpart in civil life and be equally acceptable from the qualifications point of view. This applies especially to all technical trades, but it is equally advisable to apply it to many of the administrative trades as well.

Overshadowing all these forms of training, the academic and the technical, we must devote more attention and better men to the training in the use of weapons and equipment required for war. To the man who seeks a full-time career in the Services, training in the profession of arms is the all-important factor. Realistic training and practice schemes carried out with fully equipped personnel in realistic conditions would do much to eradicate the belief that a man wastes most of his time in the Services "playing at soldiers." Administrative delays, unnecessary parades, useless fatigues, should all be swept away, and more time and attention given to training in the use of weapons of all kinds in all manner of conditions.

#### ACCOMMODATION

A very tangible factor in this whole problem, and one which affects some of the intangibles too, is the question of domestic accommodation, particularly for married Service personnel. The housing shortage is a nation-wide problem, but that is no consolation to the young man either about to join one of the Services or undecided on whether to extend his service or not. The majority of young men, of course, are single, but they intend to marry one day, and are deterred from it while in the Service by all that they see around them; for to-day, on all but the large units and units near large towns, the housing problem dwarfs all others in the mind of the married man. Many Regular Service men with their wives and small or large families are to-day living in conditions which can only be described as of Hogarthian squalor. It is a common occurrence for a man, his wife and at least one child, if not more, to be living, cooking, eating, washing, and sleeping in one room, with primitive conditions of sanitation, light and heat. These are our Regulars—the experienced backbone of our Services, the cynosure of all eyes. In their courageous and calculated acceptance of these conditions they realize that things are no better in civil life, but this makes it no less an indictment of our conduct of affairs which allows some of our best men to be living in such unhappiness and discomfort.

Meanwhile, all over the country, the large, old houses requisitioned for various purposes during the War, are now standing empty and falling into disrepair. Could they not be immediately taken over and run as flats, or hotels or hostels, for the large numbers of serving men and their families virtually homeless? Their owners will

never again be able to afford to run them in their pristine glory, and the amount to be paid in compensation by the Government for depredations, will not, in many instances, fall far short of the purchase price for outright transfer. Here is something to be done now, at once; and what a token of good faith towards, and consideration for, the Service men and their families this would be. This alone would quicken the rate of recruiting and double or treble the numbers of those extending their service.

Much the same can be said of single men's domestic accommodation in many units all over the country. The majority are certainly fit to live in, but frequently only just so. They are miles from the nearest town, poorly heated, damp, in considerable disrepair and altogether a most discouraging introduction to Service life. Plans have been made for the erection of new-type modern barracks; camps will be self-contained with all requirements for work, living accommodation, leisure activities and games. In very few cases, however, have they got beyond the plans stage.

#### OVERSEAS SERVICE

There was much wisdom and sympathetic consideration in the recent attempts to stabilize the length of an overseas tour of service at two to two-and-a-half years. That is quite long enough for any young man to be away from home, meaning Britain, unless he intends to find a career for himself overseas as a permanency. The next move, required almost solely in the Royal Air Force, but possibly in some branches of the other Services, is to move formations overseas *en bloc*. This may not be possible except with operational squadrons and certain mobile or semi-mobile supporting units, but its effect would greatly improve the esprit-de-corps of the Services which in turn would attract more of the better type of recruit. In the Royal Navy, ships are put in commission with crews drawn from certain defined areas. Wherever a ship's company finds itself it will consist of friends and men from the same areas. In the Army, drafts proceed overseas to regimental battalions and the men, not infrequently, join up with their own townsmen and school friends. A small point this, perhaps, but it helps, psychologically, to build up morale—itself an attraction to young men seeking a career in which they will not only be interested, but will also be happy and content.

#### THE PROSPECTS FOR THE FUTURE

The knowledge that his future when he leaves the Services is assured is the greatest dual-purpose factor to any young man to-day in his choosing of a Service career. It is of untold psychological value coupled with a material reward. Plans should be produced without delay for a Government Order making the employment of a percentage of Regular Service men obligatory and not voluntary for all employers of labour, particularly Government and Municipal departments throughout the Kingdom. The existence of such an order is a material factor in any considerations of the future. For there are not many young men who could be labelled as being of the best of the nation's manhood who view with any equanimity the fact that they will inevitably be thrown on the labour market at some age between 30 and 45, having completed from 12 to 24 years in the Services. They want some guarantee of further employment and, if we want them in the Services at the beginning, they must have that guarantee for the finish. Such an Order, embodying clauses that the men must be instated at wage levels commensurate with their time at any given occupation and in accordance with Trade Union rates, should be proclaimed at once. It would command more support to-day than it will in five years time.



## SUMMARY OF METHODS TO BE ADOPTED

Let us now briefly set out the proposals to be considered in an effort to attract the best of the nation's manhood into service in the Armed Forces of the Crown.

First there are the Intangibles :—

- (a) a marked improvement in the general attitude of the public towards men in the Services, brought about by propaganda, and by increasing the Service man's status ;
- (b) an immediate discarding of the system of promotion by age and the opening of the gates of advancement to ability irrespective of age ;
- (c) imbuing the young man with the spirit of the worthiness of his cause, driving to improve the way of life in the Services, matching a tightening of discipline with an increase of privileges and improvements in living and working conditions.

Then the Tangibles :—

- (a) higher rates of pay, increased allowances, discontinuation of taxing allowances, extra pay for full time and part time instructors ;
- (b) improved methods of training, more realistic practices and exercises, more encouragement for study and the gaining of qualifications in technical subjects ;
- (c) a major plan to house the homeless married families among Regular serving men by the requisitioning of the hundreds of large empty houses scattered all over the British Isles, and their conversion into flats, hotels or hostels ;
- (d) a guarantee of employment after expiry of Service engagement by the issue of a Government order making it obligatory on all employers of labour to employ a percentage of ex-Servicemen ; and the recognition of the status and professional rating of such men, commensurate with their period of service and experience gained.

## CONCLUSION

If we want the best young men, they must be given as good an inducement to join the Services as they will get anywhere else, not only in pay and reward, but also in prospects for advancement. They must have evidence that the old shibboleths have been cast away ; that whilst they are in the Services they can find a proper place in the community and can devote themselves entirely to their tasks and to the improvement of their capabilities, without fear and care for the time when they must leave the Service. But the keynote is speed. These things are required to-day. To-morrow will be too late.

---



## CHANGES IN NAVAL WARFARE OWING TO NEW AND MODIFIED WEAPONS

### EARDLEY-WILMOT GOLD MEDAL ESSAY, 1947

By LIEUTENANT-COMMANDER R. C. P. WAINWRIGHT, D.S.C., R.N.

**T**HE historic duty of the Royal Navy has been the maintenance of our sea communications. Weapons have changed as have the tactics of the forces which use them, but the Navy's place in the grand strategy of war has remained unaltered throughout the centuries.

We can no longer, however, consider the Navy and its employment as a separate entity; it has a place in a strategy in which the Navy, Army, Air Force and Civil Power are inextricably linked. It is nevertheless fair to say that while the naval view predominates in the exercise of Maritime Power, naval warfare as studied to-day is more truly a Maritime Warfare which involves a carefully judged balance between the four partners involved, in particular in the marriage of the air and sea elements. This does not mean, however, that there are any grounds for assuming that the air partner will, in the foreseeable future, supersede the Navy in its strategical role: this role will not alter whatever may be the fate of conventional or individual types of ship. Air transport continues to make great strides and has shown that it can supply the sinews of war in specific operations; but the day is far hence when it may supplant the ship as a conveyor of bulk raw materials, bulk goods, the World's food and the major supplies of war; in fact, it is improbable that such a day will ever come.

It is, therefore, primarily in the sphere of tactics that changes in weapons will be most influential so far as Maritime Warfare is concerned, although such changes may touch strategy in considering the useful purpose of specific bases and the allocation of naval forces on the world-wide scale.

The list of weapons which exist, or are likely to exist, for the prosecution of a future war is formidable, but they are all directly or indirectly linked to three essential features—the possibilities of atomic power, the future of the piloted aircraft and the future of the submarine.

It is as well to consider atomic power first, since discussion on the effect of individual weapons would be valueless without a clear picture of its possibilities and limitations.

### ATOMIC POWER

#### USE FOR WEAPONS AND PROPULSION

There can be no doubt that an atomic bomb is devastating on land and, even in its present form, is quite capable of demolishing a major dockyard if placed with reasonable accuracy. It is not generally appreciated, however, that a force at sea, whether purely naval or in the nature of a convoy, consists of a considerable expanse of sea and a very small area of ship. The question arises, therefore, whether the use of an atomic weapon at sea is justified.

The production of atomic weapons requires a vast and most expensive plant and, above all, a considerable number of personnel trained to the highest order. Whilst it is impossible to forecast precisely what progress various countries may make in reducing the cost and difficulties of construction, it is most improbable that any country will be able to produce a great number of such weapons for some years to

come; at any rate they will not be available in quantities which will permit their use on anything but selected targets of the highest priority.

For similar reasons it is improbable that atomic energy will become a general method of air or sea propulsion in the foreseeable future.

It may be concluded that, during the time ahead for which it is useful to speculate, atomic explosive will be confined to large bombs and large rockets and will not find its way into the torpedo, shell or mine; furthermore, that its energy will not revolutionize speeds or ship construction for propulsive reasons.

#### EFFECT AS AN EXPLOSIVE

There are two main features of an atomic explosion at sea—the direct destructive force, including the lethal effect of radiation, and the indirect effect of contamination by radio-active spray or rain. There is no evidence at all that either of these features from a single bomb of the type so far known would have a crippling effect on the form of Task Force generally employed in the Pacific at the end of the late war, whether the method of aiming it becomes more selective or not. With warships disposed in an anchorage in the conventional manner, the damage from a single bomb would probably be considerable, as it would also be in the case of a major mercantile anchorage, such as the Clyde. The position would be similar in a convoy of ships spaced according to current practice.

A great deal of such damage, owing to radio-active deposits leading to casualties or making ships inoperable, can be avoided by the immediate decontamination of ships' upperworks—a measure which can be achieved by efficient washing down arrangements, which it may be assumed will be embodied in the design of future warships together with protection for exposed personnel.

It is, therefore, most improbable that atomic weapons will be used at sea for a considerable time to come, except possibly on rare occasions for morale purposes. They are far more likely to be reserved for land targets amongst which must, of course, be included the main naval and commercial ports, dockyards and anchorages.

So far as the United Kingdom is concerned, there is little that can be done about such threats to maritime termini other than to provide defences which will reduce the weapons' chances of arriving. It must be remembered, however, that the deadly gases available in the late war were never used by Germany for fear of retaliation, and it may well be that similar fears regarding atomic weapons may at least limit their use in a future war. There must, therefore, be no question of considering the United Kingdom as untenable. Our defences must be sure against the more effective use of conventional explosives (in itself the best defence against methods of delivering atomic attacks), whilst the overall grand strategy of war in conjunction with possible allies must be regarded as the scale of dispersal necessary if atomic warfare is concentrated against this country.

To sum up, therefore, the effect of atomic energy on naval warfare is most probably limited for some time to come to modifications, not necessarily revolutionary, in the design of warships, to the deprivation of dockyard facilities, which involves the increased use of Fleet Trains, and possibly to a reduction in shore-based air co-operation, either due to direct action or to the necessity for concentrating air effort on local defence.

## THE PILOTED AIRCRAFT IN NAVAL WARFARE

## HIGH SPEED AIRCRAFT

Aircraft affect naval warfare from three aspects: the efficiency of ships' defences against attack; the ability of shipborne aircraft to act in attack or defence; and the potentialities of shore-based aircraft. With all three of these is bound up the great increase in aircraft speed.

Aircraft already exist which make those of the late war completely out of date, and it is reasonable to assume that within the next ten years military aircraft whose speed approaches that of sound will be in general use; furthermore, there is no reason to suppose that the difficulties of making such aircraft shipborne will not have been overcome, although it is probable that really heavy machines must still be land-based.

As the speed of aircraft increases, doubts arise as to the future of the human pilot; if he were to disappear, then aircraft might be replaced by missiles. Little can be gained by speculating on speeds beyond the sonic barrier: the human body has yet to be passed not only through the barrier, but also back again and there are enough difficulties on the lower side.

The fighter of the near future will have very little speed in hand over the bomber, and in ship defence the interception problem becomes extremely complicated, particularly when the vast turning circles of very high speed aircraft are considered.

The Navy is somewhat handicapped when compared with the other Services in that the target of an air attack is normally the base from which the defence must come, namely the main units of the force. Whatever the details of interception at sea may be, the distance which an enemy aircraft can fly between the times of detection and interception is so great that the area of interception must be pushed out as far from the force as possible. This means that interception must take place at a range beyond that at which shells or other missiles from the main units can be effective, which in turn means that an aircraft is required for defence. From this it follows that, even in a purely naval engagement, a fighter is required to help the strike aircraft through—a requirement which becomes even greater when Naval Aviation is used as a seaborne air force against distant land objectives.

The distances at which it is desired to defend the fleet or strike the enemy are too great to hold out any prospect at present of mechanical ingenuity providing more than ever-increasing aids to a human pilot who will still be required.

Merely from the air striking aspect, therefore, although types of aircraft and methods of handling and directing them will change, the aircraft carrier will still be an essential feature of maritime forces both with the fleet and in convoy.

## SLOWER AIRCRAFT

Maritime Warfare is not, however, concerned solely with high speed aircraft. Whatever may be the future, discussed later, of the submarine, it is hard to believe that counter-measures will not involve the use of shipborne aircraft capable of a comparatively low speed, at any rate for the periods when engaged in a hunt. Anti-submarine duties cannot be delegated solely to shore-based aircraft although they play an essential role in area searches, planned attacks and prolonged patrols. Shipborne reinforcements will always be necessary at short notice as a situation develops, and at present there are still large areas of ocean where the range is such as to preclude or limit severely land-based co-operation.



## SHIPS AND THEIR WEAPONS

The projecting of the interception area and the high speed of attacking aircraft also have a direct influence on tactical dispositions and the weapons employed by ships. The only effective long-range detecting system at present known is radar, and its beam, for all practical purposes, has optical limits—in other words it will not curve round the Earth. Its scope is thus reduced physically if aircraft are flying low and by design if aircraft come in high. The use of picket ships to prolong the warning range of radar, in order to enable hostile aircraft to be intercepted before they attacked the main units, was already a necessity by the end of the late war in the Pacific.

Streamlined aircraft of great speed require improved radar to locate them and, unless some new technique is evolved, such improvements will inevitably lead to greater size and weight both of radar aerials and associated equipment. It is therefore quite likely that we will be forced into the use of special ships to carry them. It is very probable that special ships will also be required as intermediate outposts to direct defending fighters onto attacking aircraft, using the information supplied by the radar ships. It is unlikely that direction by the aircraft carriers themselves would have time to be effective, and ships the size of cruisers—about the smallest which could carry the equipment and weapons for self-defence on an appreciable scale—will not be available in sufficient numbers. Ships about the size of large destroyers will be required, their defence being provided by escorts.

In considering the defensive weapons themselves, it must be appreciated that by the end of the late war the development of guided or homing aircraft weapons was well advanced and it must be assumed that they will be in common use in the near future. There will then be no necessity for aircraft to come to the "bomb-release" positions as known in the past. A weapon is required capable of accurate aiming to a longer range and a greater height than the gun is capable of attaining so that the aircraft may be destroyed, at the latest, before it can bring its missile under proper control. Thus the primary anti-aircraft armament of ships must be guided rocket projectiles.

Such projectiles are bound to be large in order to accommodate their fuel and it is most unlikely that the fleet will be able to carry, or direct accurately, sufficient of them to guarantee destruction of all attacking aircraft which evade the fighter screen; certainly in ships smaller than cruisers it is problematical whether they can be carried at all. A further weapon is therefore required as a longstop against those aircraft which break through to closer range, particularly anything of the torpedo-bomber nature which may require that closer range.

It must not be expected, however, that with the improvement in homing and guiding techniques these aircraft will approach within the envelopes of present-day close-range weapons. A heavy weapon about the size of a destroyer's gun is required with a rate of fire comparable to that of the automatic weapons now fitted.

## THE SUBMARINE

By the end of the late war it was evident that the "true" submarine had arrived. Aided by the *schnorkel*, a U-boat could remain submerged for days. It was also evident that the enemy was well advanced in revolutionary submerged speeds for submarines, in very deep diving, and in long-range torpedoes capable of independent searching action at the end of their run.

In the defence of shipping we must therefore aim at destroying a vessel which



can remain submerged indefinitely and which can, at any rate for short periods, proceed submerged at speeds comparable to those of surface warships.

There are, however, a certain number of handicaps which the submarine will suffer and which will therefore assist the defence. When she is submerged radar and radio cannot transmit, although the latter can receive if not deep. When submerged and not using radar she is dependent on hydrophone type instruments for locating and fixing her targets—a none too accurate method at long ranges and which may be affected by water temperature conditions. Although propellers capable of giving the new high speeds also increase the speed below which cavitation noises are likely to betray her presence, such speeds may well be too low to enable the submarine to reach an attacking position.

#### A/S DEFENCE

Defence against submarines falls into four phases:—

- (1) Attack on the bases or yards which produce and house them—an R.A.F. commitment.
- (2) Planned offensives in the areas through which they must pass—in all probability an operation for maritime forces.
- (3) Forward reconnaissance in the areas through which forces or convoys must pass—most likely to be a purely air matter for maritime forces.
- (4) Counter-measures to the attack, including the enemy's manoeuvre for position. This last phase is essentially a combined air/sea aspect of maritime forces and in many cases will be entirely naval.

There are many intricate problems to be solved by scientific effort in counter-acting the true submarine, since it is unlikely that Asdic systems are capable of much extension in range. Methods of detection which spring to the mind are magnetic detection from aircraft, forward laying of transmitting buoys with a hydrophone and/or asdic element, asdic detectors carried by aircraft or helicopters for use in suspect areas; all of these would be effective in a degree depending on the depth and speed of the submarine. Past methods capable of improvement are the detection and plotting of enemy radio and radar transmissions, particularly if the enemy exercises a centralised control involving the reporting of positions, and the radar detection of *schnorkels*, although, as these are small objects, deception is readily practised. The possibility should not be ruled out of a last-ditch weapon whereby the target ships themselves might attempt to destroy the torpedo.

Whatever the detailed solution of the problems may be, so far as the Navy is concerned, it is fair to assume that defence will be by a combination of escort vessels and aircraft either in offensive groups or in close support. In the latter case, their radius from the force to be covered will depend to some extent on the numbers available but must be greater than that in the late war. This indicates that an even greater number of escorts is required.

#### OTHER WEAPONS

The foregoing arguments have dealt in the general terms which are as yet practicable with air attack and defence weapons and the development of the principal underwater menace. There is still the question of surface action to be considered.

#### THE GUN

Even against the great air superiority of the Allies in the Pacific at the end of the late war, the Japanese were able to make surface contact with the American

forces off the Philippines both by day and by night. In northern waters in Winter the surface ship dictated the course of the War. It would be a very rash man who ignored the possibilities of inter-ship action in the next war. So long as the possibility of such action remains, there is a need for a ship which can destroy any vessel that the enemy can produce. The capital ship is still, therefore, a requirement. Its role must be primarily of an A.A. nature, but it must have weapons capable of dealing with a surface opponent and of bombarding shore objectives when air mastery is complete.

For some years yet these weapons must be conventional guns although, in due course, when the inherent problems are solved, it is likely that guided missiles will take their place. In the meanwhile, the development of accurate air warning and target selection methods, linked with gun control systems giving stable data for elevation and training, making the problems of day and night action identical, is a worthwhile pursuit. The results will be applicable to a great extent to future weapons.

#### THE TORPEDO

There is little to add on the subject of torpedoes. In surface action the greatest menace to the attacker is the improved "gun" accuracy of the defence. The answer is to attack from the longer range which the torpedo of the future permits, continuing the current practice of synchronising attacks from widely different angles in order to saturate the defence.

#### THE MINE

Modern techniques bid fair to make the mine unsweepable. It can be made to operate by any of a ship's characteristics; any desired delay or combination of delays can be added.

The ability of the surface ship and submarine to defeat enemy offensive and defensive mine barriers still remains in waters which cannot be fully sown, provided that reasonable intelligence is available. Improved mining will enhance the value of the aircraft in attack against coastal traffic. The difficulties of combined operations are, however, bound to be increased. Nevertheless, similar difficulties were present in the last war and were overcome by slow and patient ship movements under the cover of complete air and anti-submarine mastery. Provided that these two essentials are present, there is no reason to assume that the mine will defeat such operations, although the casualty rate may be increased.

The potentialities of the mine in offence should assist our maritime forces by enhancing the prospect of bottling up enemy forces—submarines in particular—in their bases, as well as aiding measures against his trade. The weight of this offensive will largely fall on our aircraft.

#### RADIO WARFARE

The very secrecy which must surround radio warfare often causes people to lose sight of its supreme importance in naval matters. This importance becomes the greater in the light of improvements in weapons and no effort must be spared to further its development.

The security of our movements at sea will be a major contribution to our defence against the submarine and this requires our radio to be proof against detection when used within a force or convoy and to be secure against decrypting. Likewise, sufficient channels and forms of frequency must be available to prevent the enemy from jam-

ming radar or any transmissions used for the guiding of missiles. Likewise we ourselves must endeavour to deny the enemy similar facilities. The location of his submarines by the interception and breaking of his instructions and by the interception of their transmissions in a manner which enables their positions to be plotted is vital in the evasive routing of our convoys. The detection or jamming of his radar in the attack stages may be a deciding factor in defence.

### CONCLUSIONS

The combined effect of weapon developments on naval warfare can at present only be forecast as a logical extension of the tactics evolved during the late war, which developed the principles of the air weapon and radar as applied at sea. This effect may best be summarized by first considering the Naval Task Force.

#### THE NAVAL TASK FORCE

The primary function of this Force will be to convey the air striking weapon to the place where it can harm the enemy most in the furtherance of our overall strategy.

The Force is likely to be attacked by enemy aircraft with the performance of those which can be shore-based and it is possible, but unlikely, that these aircraft will carry an atomic weapon. It may also be attacked by true submarines capable of high submerged speed and armed with long-range torpedoes. There is also the possibility of surface action under certain conditions and in certain parts of the World.

The decision whether capital ships will participate and the details of action taken to defeat the enemy must vary with the conditions of the moment, including the stage of scientific progress and the theatre of operations, but broad conclusions may be drawn.

The Force will have a core of aircraft carriers with one or two capital ships in support. They will be spaced so that they have freedom of manoeuvre for operating aircraft and so that it is improbable that more than one will be seriously affected by an atomic explosion.

There will be a screen of escorts designed as an augmenting defence against aircraft which break through our air cover and as a torpedo warning screen. To some extent this will also be a physical barrier to torpedoes or homing missiles.

The extent to which avoiding action by the Force as a whole or by individual ships when under attack will have any beneficial effect when balanced against defensive fire-power is most problematical.

Outer attack groups of escort vessels on either bow will operate in conjunction with close-support aircraft in order to prevent enemy submarines from reaching an advantageous position.

Finally there are two types of outpost—radar ships and air direction ships, the latter being provided with the immediate air cover of the fleet.

#### THE CONVOY

The problem of convoy defence is similar to that in the Task Force except that the emphasis is likely to be more on the submarine than the air menace. There will inevitably be a shortage of anti-submarine escort vessels of a speed sufficient to deal with the true submarine, and a close screen of the type employed in the late war is unlikely to prove much of a defence to a convoy when its slow power of manoeuvre



and the long range of the modern torpedo are considered. The best use of escorts will be in the form of attack groups about six or seven miles away from the convoy, working in close conjunction with aircraft. A limited number of slower escorts should, however, be kept close astern of the convoy in case a submarine seeks shelter underneath it to carry out attacks in its own time.

The best balance between prospects of defence by the escorts, which is more difficult the more the convoy is spread out, and dispersal against the final search of long-range torpedoes, will be an increase in the distance apart of ships in column to about 1,000 yards, keeping the distance apart of columns, and thus the front of the convoy, unaltered. Further dispersal against atomic attack should be disregarded.

Present day close-range weapons will be useless to merchantmen in self-defence in the near future and will not be worth fitting; nor will these ships ever have sufficient highly trained men to work or maintain complex weapons and control systems. In addition to such anti-torpedo and mine equipment as is developed, they require a 3 to 4 in. gun with as high a rate of fire as is available and with a simple method of control.

#### NAVAL ADMINISTRATION

Although their use must not be abandoned prematurely, H.M. ships must be prepared to do without the home dockyards in a future war. Dominion and Allied bases reasonably free from heavy air attack may be available, but the fleet must be equipped to remain at sea for months on end.

Comprehensive Fleet Train facilities must be developed, covering all aspects of oiling, storing and ammunitioning at sea in all weathers.

#### MEN AND MATERIALS

It has often been said in the past that men, not materials, win wars. There is a tendency in some quarters to say the same to-day. Whilst this is true to some degree, we must interpret it very carefully in the future.

The Principles of War do not alter. The leadership which applies them soundly and boldly and which trains its manpower to a high degree in the weapons of war to implement decisions will win wars—but those weapons now have vital significance.

The role of the Navy will not change, but its ability to succeed in its task depends on scientific achievement and the provision of its fruits to the fleet. A navy which is not equipped as well as its opponents will not survive a future war—the advance in weapons is too great; and that navy will not stand on its own but by the close co-operation of all the partners which make the whole country the fighting machine.



## HIGHER COMMAND OF THE ARMED FORCES

By AIR VICE-MARSHAL E. J. KINGSTON-McCLOUGHRY, C.B.E., D.S.O., D.F.C.

On Wednesday, 14th January, 1948

FIELD-MARSHAL LORD WILSON OF LIBYA, G.C.B., G.B.E., D.S.O., in the Chair

THE CHAIRMAN: We have as our Lecturer this afternoon Air Vice-Marshal E. J. Kingston-McCloughry, who is Senior Air Officer in Scotland and who has come all that distance to talk to us. He is going to talk about the Higher Command of the Armed Forces, very largely on the basis of his experience from his service with the Supreme Allied Commander of North-West Europe during the recent war.

### LECTURE

THE late war brought us face to face with numerous unforeseen urgent and dominating problems in the organization of the High Command of the armed forces, arising from many new and extremely complex considerations which had to be reconciled. Among them were:—

(a) The conduct of the War attained such dimensions that political control and direction of policy became prime factors in general strategic plans.

(b) In consequence, the Allied military effort required a new and realistic co-ordination and co-operation between the Navy, Army and Air Force of each single combatant; between the corresponding Services of one or more Allies; and between all the Services of all the Allies operating jointly or in combination in one or more theatres.

(c) Except for the minor operations of Trenchard's Independent Air Force in 1918, the recent conflict was the first major war in which the roles of the Royal Air Force ceased to be treated as subsidiary to those of surface forces. The functional status of the R.A.F. received recognition as equal to and as independent as that of the Navy and the Army. Thus, a third Service was added to the previous two to complicate the problems of co-ordination and co-operation.

(d) The scale and complexity of operations required something more than goodwill alone for effective control, direction and co-ordination of forces.

(e) The application of science to a degree which influenced war as a whole provided a new factor common to all the fighting Services.

(f) The vital importance, in modern war, of accurate and correctly interpreted intelligence with regard to the enemy's whole war potential, affected the operations of all Services.

As the outcome of these and other factors, conceptions of High Command and of combined and joint operations<sup>1</sup> which had hitherto in general depended on liaison and goodwill amongst Navy and Army Commanders-in-Chief—British and Allied, gave place to a new conception: to a more positive approach to the problems of High Command.

<sup>1</sup> In the late war the Allies agreed to the use of the term "Joint Staff" to indicate the inter-Service staffs of the individual Nations and "Combined Staff" to indicate the corresponding inter-Allied staff. It seems that similar nomenclature should be recognized in anticipation of possible future operations. Certainly, the old conception of combined operations will require revision because to-day most major operations combine all fighting Services.

For a number of reasons no standard organization was adopted for the High Command in the various operational theatres in the late war. Indeed, any such attempt might possibly have been premature and even disastrous. Nevertheless, from the lessons of practical experience and under pressure of the logic of events there did in fact crystallize a recognizable pattern of High Command resting upon generally valid principles. The object of this lecture is to describe that pattern and show how the underlying principles are illustrated by it. It is noteworthy that although the structure of the subordinate command in each of the fighting Services has been the subject of long study and improvement and is buttressed in practice by the whole force of discipline, the superior command, embracing two or more Services and even two or more Allies, is largely a new field. It is hard to resist the belief that many of the stresses and strains which developed in the High Command organization during the late war might be lessened or entirely obviated if there were a fully appreciated theory of high command with which senior officers were as thoroughly indoctrinated as their juniors are with the internal discipline of the respective Services.

At the outset, however, one word of warning: throughout this lecture, when the principles of High Command are being discussed, it is desirable to bear in mind that in the last analysis the qualities of the individuals in it make or mar any High Command organization.

Undoubtedly, one of the most far-reaching lessons of the late war is that, despite the increasing mechanization of the instruments of war, the human agency is still of ultimate importance. Therefore, perhaps it is not surprising to find that nowhere were the inherent limitations of the human agency more apparent than in controlling and directing the vast modern forces of war. One important feature of all High Command organizations was that the duties of any high office, although clearly defined in theory, could be discharged in as many different ways as there are different types of personality. In other words, each high officer placed his own interpretation on the duties of his appointment. Consequently, the pattern of functioning of a High Command system, as originally conceived, was in many cases subject to considerable distortion. Therefore, a lesson to be learned is that in deciding a system of High Command and in defining the duties of the posts within it, it must be realized that each high post requires a certain type of personality to make the system function as originally conceived. There is a great deal to be done with regard to research concerning the type of personality most suitable for each appointment in a system of High Command.

#### PARAMOUNT COMMAND

The Prime Minister as head of the War Cabinet is in fact the paramount commander of our armed Forces. He interprets the nation's war will, decides the war intentions, and allocates forces and material to the different theatres; there is no other authority who can make these general allocations. Mr. Winston Churchill is an outstanding example of ready acceptance of the paramount commander's responsibility. The term "Command" is not, it is true, usually applied to the ultimate political direction of war; nevertheless, the war effort of a nation is, or should be, the expression of a single will and intention working itself out in practice, and it is a healthy reminder of this fact that the same terms should be applied to every stage in the transmission of that intention, from top to bottom.

The Prime Minister also has scientific and civil authorities who act as his staff in these aspects of war. It is the War Cabinet's responsibility to co-ordinate the

military, scientific and civil aspects of war. Experience of the late war indicates, however, that some improvement is required to the existing co-ordinating machinery, especially as the tendency is for the military and civil aspects of war to become more and more competitive.

Where Allies are concerned, the paramount command is the allied political heads in combination.

If Dominion forces are placed unreservedly under the U.K. War Cabinet there are no complications for the paramount command. The Dominions, however, set more and more limitations on the control of their forces by the U.K. War Cabinet and, in so far as this happens, their forces tend to be identical, for purposes of paramount command, with Allied forces. Similarly, control of United Nations' forces, if such are ever realized, will present the same problems as control of Allied forces, only with a greater complication due to the number of "Allies" involved and their theoretical equality of status.

As Chief Staff Officers to the Prime Minister and War Cabinet, the Chiefs of Staff, using their three respective Ministries—Admiralty, War Office and Air Ministry, have three main functions :—

(a) They are the authority responsible for giving military advice to the War Cabinet on all aspects of the war effort and the armed forces.

(b) They interpret the War Cabinet's intentions and act as its agent in communicating with subordinate commanders, amongst whom they are responsible for securing all necessary co-ordination.

(c) They are also directly responsible, in respect of their own Services, for raising, training, equipping and administering the armed forces, before these are allocated to the subordinate commands, and for the provision of those services which are provided from the centre of the armed forces as a whole or from each of the three Services.

Experience in the late war proved our pre-war paramount command with its staffs and secretariats to have been based on sound principles. Although subsequent developments were necessary, the pre-war organization was sufficiently flexible to permit growth and changes to take place without serious difficulty. After the United States entered the War, both Governments agreed that the U.K. C.O.S. and secretariat organization should be adopted for all Allied armed forces in the form of the Combined Chiefs of Staff with a secretariat in Washington, who stood in the same relation to the Allied political heads in combination as the C.O.S. did to our Prime Minister.

It is sometimes suggested that there should be a Supreme Military Adviser to the War Cabinet, who would be, according to the point of view taken, either a duplicate Prime Minister and paramount Commander in uniform, or else a single Chief Staff Officer to the War Cabinet for all three Services. To this suggestion there are overwhelming objections :—

(a) To give such power to one military man, who might become a rival to the Prime Minister, would not be in accordance with British tradition which is based on two centuries of experience.

(b) The merit of the three Chiefs of Staff is that they are each integral members of their own Service organizations. A single Chief of Staff could not have the same immediacy of contact.

(c) In view of the increasing complexity of modern war the task of advising



the War Cabinet over the vast theatres of modern war is better vested in more than one person.

(d) We could never be sure of finding *the* man at the time of emergency, qualified and able to act as sole military adviser to the War Cabinet in respect of all three Services.

(e) There is the possibility that the military mind may not be able to appreciate the full significance of scientific aspects and developments. It should be noted that a scientist has now been appointed as Chairman of the Defence Research Policy Committee, and in this capacity he may attend meetings of the Chiefs of Staff Committee whenever he or the Committee desire.

(f) Almost certainly a single Chief of Staff would not be acceptable to the Dominions because, at the centre, the effectiveness of their military co-ordination and co-operation is better met by the flexibility and facilities inherent in committees. There seems little doubt that the Dominions would traditionally and constitutionally prefer to co-operate with the broader organization of the U.K. C.S.O.S. rather than with any single military authority.

These objections do not apply to the post of Minister of Defence, now formally adopted as a part of the constitution. The Minister of Defence, as was recognized explicitly in the White Paper of October, 1946, and implicitly in Mr. Churchill's assumption of the office, is only a deputy or shadow of the Prime Minister for war purposes. In peace, when war preparations are only a part and even a small part of the activities of Government, the Minister of Defence may be thought of as a Departmental head; but in war, when the co-ordination and direction of hostilities is the supreme concern of the State, the duties and functions of the Prime Minister and the War Cabinet must necessarily absorb those of the Minister of Defence. It is therefore in peace that the Minister of Defence and Defence Committee, as the "shadows" of the wartime Prime Minister and War Cabinet respectively have their use and value.

### THE SUPREME COMMANDER

When an intention has been formulated by the paramount command and the forces considered necessary for its execution have been assigned, it is thereafter necessary:—

(a) To interpret that intention in the light of developing circumstances, which may involve applying to the paramount command for further forces or instructions.

(b) To assign tasks within that intention to the respective Services, and to ensure the co-ordinated fulfilment of those tasks.

The paramount command cannot, of course, perform these functions itself; they must be performed "on the spot" by a mind giving undivided attention to the one specific object. It is equally axiomatic that these functions can best be performed—for any one given intention of the paramount command—by a single individual. The objections to two or more concurrent authorities interpreting the same directive or allocating tasks within it, are obvious. In the simplest case this single authority charged with executing a decision of the paramount command is either a Supreme Commander responsible to the War Cabinet and communicating with it through the Chiefs of Staff or, where Allies are involved, a Supreme Allied Commander responsible to the allied political heads and communicating with them through the Combined Chiefs of Staff.

The role of this single individual and the nature of his command are aptly



covered by the American concepts of a "Task Force" and "Task Force Commander." In the last analysis he commands and controls not actual forces—fleets, armies, and air formations, but the functions of those forces which have been allocated or are necessary to the performance of the task with which he is charged. Naturally, in many cases, the two things coincide, and obviously this is the preferable arrangement as no possibility of conflicting loyalties can then arise. Not infrequently, however, the commander of a fleet or a bomber force, for example, may have duties in relation not only to the directive of the "task force," but to some other object, and it may not be practicable to arrange this otherwise. Most of the apparent complexities and variations in the organization of the High Command will be found to resolve themselves if this conception of a "Task Force Commander," commanding the functions necessary to the performance of that task, is held firmly in mind.

A further occasion of complication may be when the Supreme Commander has a dual role. He may not only command as a whole the functions of the three Services placed at his disposal by the paramount command, but may himself also be the effective commander of one of the three Services. This is especially likely to be the case if the task in hand is one in which two of the three Services have only a minor role to play. When this happens there may apparently be only three Service Commanders-in-Chief and no Supreme Commander, or else a Supreme Commander and two Commanders-in-Chief, whereas really the Supreme Commander and one of the Commanders-in-Chief have been "telescoped" into a single person. It may, of course, also happen that the Supreme Commander combines with his role as such the command of forces or functions outside the scope of the specific "task." In principle such duplications may be regarded as undesirable since they must tend to distract the Supreme Commander from the pursuit of the single main object. In practice, convenience, economy or personalities may often make such arrangements unavoidable, and when that is so, the more clearly the true nature of the duality is recognized, the less harm is likely to spring from it.

We have already seen that the same force may perform functions in respect of more than one "task." This is particularly applicable to all that constitutes a "base," and especially a main base pre-existing in peace. In consequence, even where only one "task force" happens to be operating from a base, and where the execution of only one current intention depends upon that base, it is not customary to subordinate either the base itself or its functions to the Supreme Commander. The base therefore remains under the command, so far as that term is applicable, of the paramount command, by which it is directed to provide the necessary facilities to the Supreme Commander or Commanders concerned. It may be observed that whereas a Supreme Commander's sphere is defined by *intention*, a Base Commander's is determined by *location*—it is essentially a geographical command, and from the absence of a specific intention follows the result that a Supreme or inter-Service Commander for a base is rarely, if ever, necessary.

Before considering in more detail the relations between the Supreme Commander and his Commanders-in-Chief, attention must be drawn to a class of case in which the paramount command establishes an off-shoot of itself. It may be that interpretation "on the spot" of a directive of the paramount command involves not only military considerations, but also political decisions which are beyond the competence of a military Supreme Commander. It may also be that conflict or competition between two or more directives of the paramount command requires to be resolved or regulated without constant reference back to the source of authority. In these cases the paramount command establishes a kind of "outpost" in the

theatre of operations to exercise its own power by delegation, an institution which came during the late war to be known as the "Resident Ministers of State."

#### RELATIONS WITH COMMANDERS-IN-CHIEF

Turning now to the relations between a Supreme Commander and his three subordinate Service Commanders-in-Chief (or two, if one of them be coincident with himself), the guiding principle is that advice must be as little as possible divorced from execution. In performing those duties of interpretation, allocation and co-ordination already described, the Supreme Commander needs detailed advice in regard to each of the functions concerned. The only ultimate guarantee for the trustworthiness and responsibility of this advice is that he who tenders it may have to execute the orders based upon it. The absence of such a guarantee has been the cause, on more than one occasion during the last war, of friction and even failure. The German O.K.W. is an outstanding example of an organization set up to give advice without executive responsibility. Although, in this case, the evil of such an organization was probably intensified by special circumstances, namely suspicion between Hitler and the German Army High Command, nevertheless, the O.K.W. is generally regarded as having been one of the most important factors leading to Germany's ultimate defeat.

In respect to a Supreme Commander it is his Commanders-in-Chief who are charged with execution. Accordingly, the ultimate responsibility for advice regarding their respective Services must rest with the Commanders-in-Chief. In short, they have a dual role: so far as advice is concerned, they stand to their Supreme Commander in the same relation as the Chiefs of Staff stand to the Prime Minister and War Cabinet—they are staff officers; so far as execution is concerned, they are subordinate Commanders. It follows that if, in one sense, the Commanders-in-Chief are the Supreme Commander's staff officers, their staffs are also, to that extent, his staffs; and this is recognised in the formation of Joint Staffs, such as Joint Planning Staffs, composed of officers who have each an integral position in the staff of their own Commander-in-Chief. The Supreme Commander's own staff will then be in reality a secretariat rather than a staff, except in so far as they deal with those forces or functions (to be mentioned presently) which the Supreme Commander controls directly and not through one of the Commanders-in-Chief.

It will be observed that the relationship between the Chiefs of Staff and the War Cabinet represents a breach of the principle that advice and execution should be associated as closely as possible. In part the breach is apparent only, because much of the advice tendered by the Chiefs of Staff relates to matters preceding the establishment of this or that supreme command, and the allocation of forces and issue of a directive to it. In part, however, the breach is also a real one, inevitable owing to reasons of time and space. If the Supreme Commanders in the various theatres could be located in the proximity of the paramount command, they would automatically become its principal advisers, for the purposes of their respective commands. The same phenomenon reappears within a supreme command wherever the Supreme Commander is separated by long or difficult communications from the places where the main headquarters of one or more of his Commanders-in-Chief must necessarily be located. When this is the case, the tendency cannot be resisted for the Supreme Commander to build up his own staff to afford him advice on matters concerning the Service with whose Commander-in-Chief he is not in intimate contact.

A Supreme Commander must necessarily have his own staff, in the strict sense of the term, in respect of the forces and functions which he controls directly, though, to avoid distraction of attention and effort, these forces and functions should in principle be kept to a minimum. Only where the advantages are indisputable should this organization be adopted. In all other cases, direct control should remain with the Commanders-in-Chief concerned, with the responsibility of the Supreme Commander limited to policy and to co-ordination. *A fortiori*, doubtful cases should at first be left under the direct control of the Commanders-in-Chief in order to avoid running any risk that functions and services once transferred may, as a result of further experience, require later to be transferred back. The principal scope for centralized control under the Supreme Commander probably lies in the fields of specialized intelligence, propaganda and publicity, and certain administrative services.

The command of Allied forces introduces complications of two main kinds. In the first place, the identity of aims and intentions at the top in the combined paramount command may be imperfect, with the result that the paramount command of each Ally attempts to keep separate control of its own national forces under a Supreme Commander. One consequence of this may be the appointment of a so-called "Deputy Supreme Commander," who in fact is often not a deputy at all, but intended by the nation which appoints him to be a check and control upon the Supreme Commander. Another consequence is often the conceded or assumed right of the Commanders-in-Chief to make representations to their respective paramount commands over the head of the Supreme Commander. The second source of complication is that, where Allied contingents of the same Service are placed under the same Supreme Commander, differences of organization, jealousies or other causes may prevent their subordination to one Commander-in-Chief, so that the Supreme Commander has to deal directly with two Commanders for the same Service or, in other words, to perform himself the functions of the missing Commander-in-Chief as best he can.

Thus far the machinery through which the decisions of the paramount command are translated into action in the theatres of war has been considered in the abstract, with a view to showing how the character of that machinery, despite superficial varieties and variations, is determined by a few simple and universal axioms. It is now proposed to review the major commands which functioned in the late war, treating them as illustrations of the different forms in which the basic structure of high command, and especially inter-Allied high command, may manifest itself.

## MAJOR COMMANDS IN THE 1939-45 WAR

### THE MIDDLE EAST

First, the Middle East. This high command falls within the foregoing classification of a main base. There was at first no single specific intention of the paramount command and thus no Supreme Commander was appointed. The Middle East also illustrates the paramount command "outpost" in the form of a Resident Minister of State which was created because of the political circumstances and the several different intentions.

This high command was organized as a Joint Headquarters with three Commanders-in-Chief of equal status responsible respectively for the Navy, Army and



Air Force. In many respects the circumstances of the Middle East were simpler than those of most other Commands in the War. There were no Allies to complicate things, and there were no special location or communication problems.

When the paramount command formulated the specific intention of clearing North Africa of the enemy, specific Allied forces were assigned for the task, and a Supreme Allied Commander was appointed. In fact, due to political considerations in North Africa, the Supreme Allied Commander was given the right of direct access to the British and U.S.A. Chiefs of Staff respectively. For the initial landings, the United Kingdom and the U.S.A. were the main bases and these, of course, were not placed under the Supreme Allied Commander. A notable feature of the administrative organization was that each Ally retained its own system of maintenance and supply.

A peculiarity of this high command was that the Supreme Allied Commander was also the C.-in-C. of the land forces because he had to co-ordinate two Allied land Cs.-in-C. This resulted in the Supreme Allied Commander having a greatly swollen staff, predominantly Army, and this involved him in unnecessary Army detail.

Certainly, the successful working of this high command was the result of personalities—in particular General Eisenhower and Lord Tedder.

#### SOUTH-EAST ASIA

When the paramount command formulated the intention to recapture Singapore, as for North Africa, specific Allied task forces were assigned, and a Supreme Allied Commander appointed.

The main base serving the Task Force was India; but this base was also serving other forces and was kept under a separate high command, except in respect of the air forces where, for special reasons, some aspects of the base were placed under the Supreme Allied Commander.

Some of the naval and air forces had roles additional to supporting the Task Force and were not placed under the Supreme Allied Commander in respect of these roles.

The Supreme Allied Headquarters contained elements of all three Services, and the Supreme Allied Commander was responsible to the C.C.S. through the British C.O.S. This arrangement was made because South-East Asia lay within the region of British strategic responsibility where the British C.O.S. were the executive agents for implementing the Allied intention.

Under the S.A.C., three Cs-in-C., each with his separate headquarters, commanded respectively the naval, army and air forces. British forces predominated over American forces, but smooth working of the high command was made more difficult by the U.S. land C.-in-C. being given the dual role of Deputy Supreme Allied Commander. The particular complications were that the American land forces were not themselves under the Army C.-in-C. and also that the U.S. land C.-in-C. had dual responsibilities in fields beyond the purview of the S.A.C.

Another complication was that geography and communications made inter-accessibility of the various headquarters difficult. With the capture of Singapore as the S.A.C.'s ultimate aim, it was probably wiser for him to move his headquarters to Ceylon, but this resulted in the British Army C.-in-C., who was heavily involved in Burma, having his headquarters far removed from the S.A.C. This, in turn, led to the S.A.C. building up a considerable army element in his headquarters, and inevitably duplicate advice ensued. After some not very successful planning on the



part of the Supreme Allied Commander's integrated staff, changes were made whereby all planning was transferred to members of the three Cs.-in-C. staffs. This new arrangement worked most successfully.

Perhaps the most unsatisfactory aspect of this high command was the growth of a very large and unwieldy supreme headquarters staff, specially on the administrative side, to deal not only with policy and general plans, but also with detail.

#### INVASION OF NORTH-WEST EUROPE

When the paramount command formulated the intention to invade Western Europe, a Supreme Allied Headquarters was created with a Supreme Allied Commander responsible to the Combined Chiefs of Staff, but with the right of direct access to the British and American C.O.S. separately. The provision for this direct access was due to the planned preponderance of U.S. forces in N.W. Europe.

An Allied Naval C.-in-C. and Air C.-in-C. (except for the final phase) directly responsible to the S.A.C. for naval support and amphibious operations, and for air support, respectively, were created each with his separate headquarters. Although Field-Marshal Montgomery was appointed to co-ordinate OVERLORD planning and to execute the initial assault, no specific and permanent land C.-in-C. was appointed, and this command was not integrated below Supreme Headquarters. As a result of this arrangement, a number of complications followed. For one thing, whereas a large staff of army officers was formed in the Supreme Headquarters, it did not contain any naval or air element, except in a very minor way for intelligence. This resulted in an unbalanced chain of command because the naval and air forces had one more link than the army organization. Furthermore, during the period when Field-Marshal Montgomery was co-ordinating the Allied land forces, his headquarters was temporarily raised to the level of those of the Naval and Air Cs.-in-C. which, in turn, gave rise to other difficulties in the chain of command.

A further complication was the high command of the strategic bombers. The highest level of U.S. authority urged the placing of all heavy bombers based in the British Isles and the Mediterranean under the S.A.C. for both the preparation and execution of OVERLORD. The U.K. authorities, however, were reluctant to agree to this because they maintained that these forces had the additional dual role of the strategic bombing of Germany. Later, however, it was decided to give the S.A.C. control of the heavy bombers for a limited period immediately before and after D-Day. In actual practice, owing to the personalities concerned, the S.A.C.'s use of the heavies was effected by a very loose arrangement.

Geographical and communicational factors which affected the locations of the various headquarters caused great difficulty in planning, co-ordination and co-operation. In particular, during the assault the S.A.C. and the Naval and Army Cs.-in-C. were accessible to each other near Portsmouth, whilst the Air C.-in-C. was tied to Stanmore because of communications with his own command. After our land forces were established in France, some parts of the Cs.-in-C. headquarters were moved to Normandy whilst others had to remain in the U.K. This lack of mutual accessibility for the Cs.-in-C. left much to be desired.

As in South-East Asia, this Supreme Command also failed to resist the very great pressure of setting up a large and unwieldy staff, especially on the administrative side, to deal not only with policy but also with detail.

## SUMMARY

Before concluding, I will outline the high command organization which I recommend to satisfy the principles mentioned and also to embrace the lessons learned from our experiences in the late war.

On the basis that the Supreme Commander exercises command through three Service Commanders-in-Chief and is himself concerned mainly with the general planning and allocation of his forces and materials, and only to the smallest possible extent with detailed administration or tactical decisions, his headquarters should consist of three elements :—

(a) Joint Committees drawn from the headquarters of the Services Commanders-in-Chief. The essential features of these committees are :—

(i) The officers forming the Joint Staffs remain on the staff of their own Service headquarters.

(ii) At the lower levels, members of the Joint Staffs from each Service headquarters work together in one room and thus form joint teams which ensure that an inter-Service view is presented.

(iii) On the higher levels the Joint Staffs are composed of officers drawn from each Service headquarters who meet together in committee to discuss the problems for which they are collectively responsible. This ensures that at the higher levels members of the Joint Staffs are closely in touch with realities and that the views of each Service are adequately and directly represented.

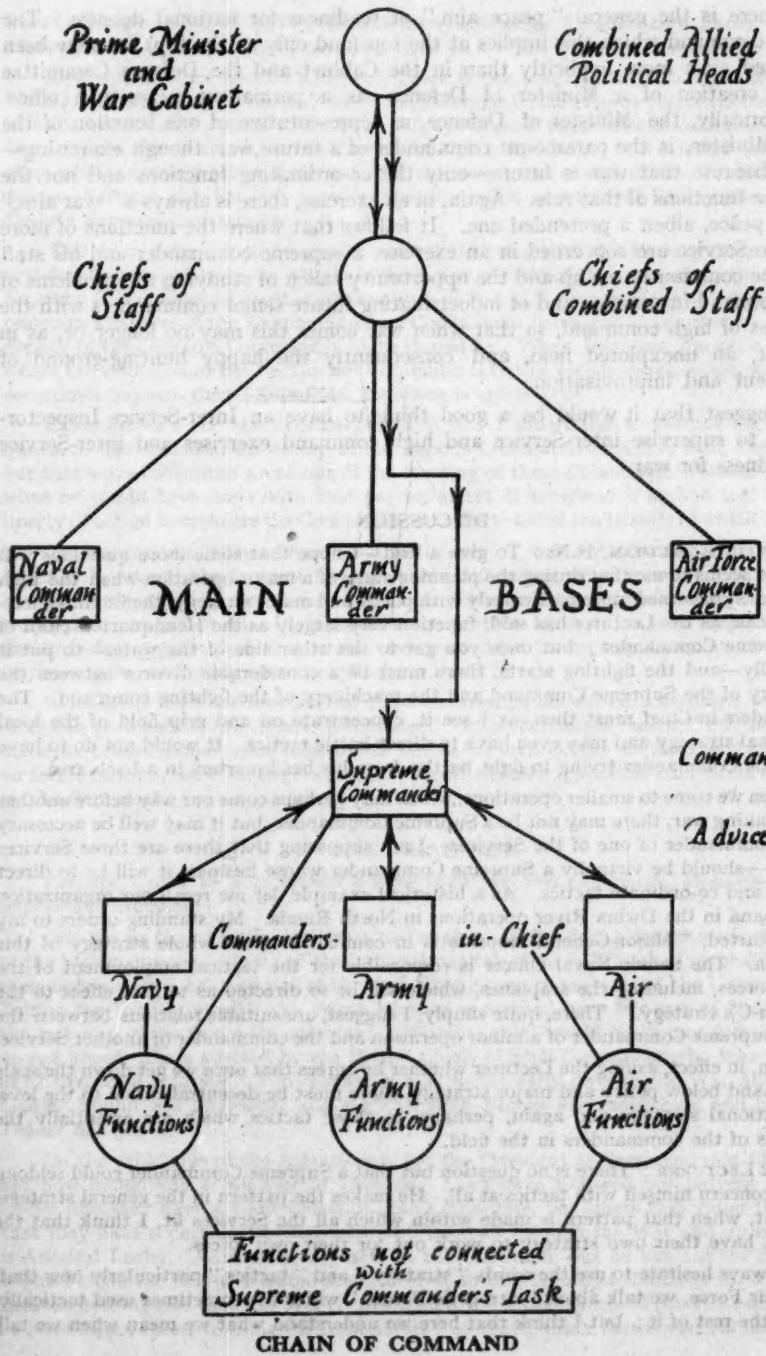
(iv) Major matters come for ultimate decision to a committee of the three Commanders-in-Chief with the Supreme Commander as Chairman when he wishes to be present.

(b) A secretariat on the lines of the War Cabinet Secretariat in Whitehall. This secretariat would be composed of selected naval, army and air force officers and would be headed by a selected senior officer. In addition to performing normal secretarial functions for the Supreme Commander and Joint Staffs, it would provide the machinery for disseminating his views and requirements to the appropriate quarters and would have the special responsibility of keeping the Supreme Commander fully informed on all current matters. The essential difference between a secretariat and a staff is that, whereas a staff could make decisions in the name of the Supreme Commander, a secretariat would not have this executive power.

(c) An Inter-Service Staff to deal only with those matters which are under the direct executive control of the Supreme Commander.

The senior staff officer of the Supreme Headquarters should be Chief of the Joint Staffs. In addition, there should be a Principal Administrative Officer responsible for the work of that part of the Joint Staffs which deals with administrative matters and to act as Chairman of the Principal Administrative Officer's Committee. He would require a small staff.

Finally, one word about high command in peace. In peace there are no military "tasks" or objectives in the same sense as in war. Consequently the need for supreme commands, still less for Allied supreme commands, does not make itself felt, and the basic structure of command is then geographical and largely separate for each Service, like the base command in war. In two respects, however, objectives in peace time do exist, and have, or should have, important implications.





First, there is the general "peace aim" of readiness for national defence. The unitary command which this implies at the top (and only at the top) has now been recognized even more explicitly than in the Cabinet and the Defence Committee by the creation of a Minister of Defence as a permanent peace-time office. Metaphorically, the Minister of Defence, as representative of one function of the Prime Minister, is the paramount commander of a future war, though exercising—simply because that war is future—only the co-ordinating functions and not the executive functions of that role. Again, in an exercise, there is always a "war aim," even in peace, albeit a pretended one. It follows that where the functions of more than one Service are concerned in an exercise, a supreme commander and his staff should be consciously set up and the opportunity taken of studying the problems of high command in practice and of indoctrinating future senior commanders with the principles of high command, so that when war comes this may no longer be, as in the past, an unexplored field, and consequently the happy hunting-ground of experiment and improvisation.

I suggest that it would be a good thing to have an Inter-Service Inspector-General to supervise inter-Service and high command exercises and inter-Service preparedness for war.

#### DISCUSSION

CAPTAIN E. ALTHAM, R.N. : To give a lead—I hope that some more questions will follow—it seems to me that during the planning stage of a major operation when the high command is concerned more particularly with policy and major strategy, the Commanders-in-Chief can, as the Lecturer has said, function very largely as the Headquarters Staff of the Supreme Commander; but once you get to the other side of the water—to put it graphically—and the fighting starts, there must be a considerable divorce between the machinery of the Supreme Command and the machinery of the fighting command. The Commanders-in-Chief must then, as I see it, concentrate on and grip hold of the local operational strategy and may even have to direct battle tactics. It would not do to have a Supreme Commander trying to fight battles from his headquarters in a back area.

When we come to smaller operations, which may perhaps come our way before another world-shaking war, there may not be a Supreme Commander, but it may well be necessary that a Commander of one of the Services—I am supposing that there are three Services involved—should be virtually a Supreme Commander whose business it will be to direct strategy and co-ordinate tactics. As a historical example, let me recall our organization of command in the Dwina River operations in North Russia. My standing orders to my flotilla started, "Major-General Ironside is in command of the whole strategy of this campaign. The Senior Naval Officer is responsible for the tactical employment of the Naval Forces, including the seaplanes, which will be so directed as to give effect to the G.O.C.-in-C's strategy." There, quite simply, I suggest, are suitable relations between the virtual Supreme Commander of a minor operation and the commander of another Service.

I am, in effect, asking the Lecturer whether he agrees that once we get down the scale of command below policy and major strategy, there must be decentralization to the level of operational strategy and again, perhaps, to those tactics which are essentially the functions of the commanders in the field.

THE LECTURER : There is no question but that a Supreme Commander could seldom, if ever, concern himself with tactics at all. He makes the pattern in the general strategic plan, but, when that pattern is made within which all the Services fit, I think that the Cs.-in-C. have their own strategy to work out for their own forces.

I always hesitate to use the words "strategy" and "tactics," particularly now that, in the Air Force, we talk about "Strategic Forces" which are sometimes used tactically, and all the rest of it; but I think that here we understand what we mean when we talk



about strategy. The Cs.-in-C. definitely have a strategy for their own forces, and that strategy must fit in with the general strategic plan of the Supreme Commander.

CAPTAIN C. S. B. SWINLEY, R.N. : There is one point which I should like to raise. I think that the Lecturer defined one of the functions of the Deputy Supreme Commander as to be a check and a corrective. I can only speak from experience in command of ships, but I should like to think that as Captain of a ship my deputy was a friend and adviser who, whether he agreed or disagreed with my views, was ready at any time to take my place. Perhaps the Lecturer would enlarge on this question of the functions of the Deputy Supreme Commander.

THE LECTURER : Yes. Actually what I said was that the Deputy Supreme Commander may be put in by an Ally as a check and control of their nationals when under a Supreme Commander of another nationality. S.H.A.E.F. was a case where there was no question whatever of the Deputy Supreme Commander being put in as a check ; he was a deputy to the Supreme Commander, as he should be. When, however, you get a situation where the intention of the Paramount Command is not perfect between Allies, which does sometimes happen, then I am afraid the check is apt to arise.

COMMANDER F. G. HACKFORTH-JONES, R.N. : I should like to ask the Lecturer one question. He criticized the set-up of the various Commands in S.H.A.E.F., and pointed out that some difficulties arose out of the locating of these Commands. Would he tell us what he would have done with that particular set of problems if he had had complete liberty of action to organize the Commands, in order to avoid the trouble of which he spoke?

THE LECTURER : That is rather a swift one. I was not meaning to criticize the S.H.A.E.F. set-up, but to point to some of the difficulties which arose. Criticism would have to be measured against the circumstances of the time—political factors, personalities, works priorities and so on. If we consider the problem in, say, January, 1944, there was probably not a great deal that could have been done to improve locations, because of works services, including communications.

A lesson is that the locations of High Commands should be considered very early after the paramount intention is formulated. Also that improvements will have to be made in Cross-Channel communications before we can expect to arrange for strategic air forces based in the U.K. to give reliable and satisfactory support to land forces operating on the Continent.

#### THE CHAIRMAN

Perhaps I may be able to add a little from my own experience, as having been a Supreme Commander.

One has to face this problem from two angles. In the first place, there is the aspect of the higher direction of war at the national capital—that is Whitehall, probably, in our case, unless we are bombed out of it ; and Washington in the case of the United States. Taking the British set-up : the Prime Minister is assisted by a Minister of Defence. In the last war, those two were combined. Whether they would be in any future war we do not know. He is advised by the British Chiefs of Staff Committee who take the duty of Chairman in rotation. You remember that in the early days of the War Admiral Sir Dudley Pound was Chairman, and then Sir Alan Brooke succeeded him, and now Lord Tedder has got it.

On the other side of the Atlantic you get the President as Commander-in-Chief. He has now introduced a Minister of Defence. They have followed our pattern that far. Under him they have a Joint Chiefs of Staff Committee, but where they differ from us is that they have a permanent Chairman, and that, all through the War and up to to-day, is Admiral Leahy. Admiral Leahy acts as the Chairman, but he has not the authority which I think the Lecturer feared might accrue, so that he might challenge the President, because nothing like that has ever occurred, and the actual Chiefs of Staff of each Service do have direct access to Congress committees ; so that I think that if you did have a sort

of permanent head of the Combined Chiefs of Staff, he would be a Chairman and not very much more.

Mention was made of political competition in the future. I always feel myself that as Service Commanders we have always been at the direction of the political side. Can one really take a single war in the history of this Country where we have not been? I dare say that some of you may look back to some very good articles which appeared in *The Times*, written by Field-Marshal Lord Wavell, in which he dealt with what I think was called the attributes of a Commander, and with who he thought in past history was the best Commander. One of the things he said was that he should be the real servant of his State. I feel that if the political pull is so great, the Service Commander must still be a servant of his State; you cannot get away from it. I think that Lord Wavell chose Belisarius as the man who best fulfilled those ideas, so perhaps someone will read Belisarius and see whether he would now come in to be a Supreme Commander.

The next point that I should like to make concerns the question of Dominions and Allies referring to their own Governments if things are not right in operations, behind the back, as you might say, of your Supreme Commander or Commander-in-Chief. I do not think that you will ever get away from that. It happened in the last war, and it happened in this war. When the troops of a nation—and the Dominions are nations now—are placed under a Commander who is not of their nationality, the Commander of those troops does retain the right to correspond direct with his Government, and that Government has a right to protest to the Central Government if necessary. I do not see how you are going to limit that, but it does have an appalling effect on operations.

That is where we noticed that the Germans had an advantage, in their flexibility. They could pull out brigades and divisions as a reaction to any surprise move or success by us, and they could do so very quickly indeed. They were very quick in reacting to any surprise move, because of that flexibility. They could pull out a division, not minding whether it came from Bavaria or East Prussia or Brandenburg, and put it somewhere else. We could not do that with some of our Dominion divisions, nor with Allies, without previous agreement first. As a rule they concurred, but there was always that little snag, that you could not do it in a hurry.

As regards the Supreme Allied Commander being engaged in operations himself, personally I think that if he is the Supreme Commander, whether Allied or otherwise he should never be engaged in operations, but you will have Task Force Commanders. Where all three Services are engaged, the Service that is predominant must have the co-ordinating authority, and its Commander becomes virtually the local Supreme Commander. I introduced that myself in the Adriatic operations in 1944, in which the predominant Service was the Air, and the Air Commander at Bari was made the co-ordinator of all three Service operations in and across the Adriatic, and that worked very successfully. You may therefore have, with local Task Force Commanders, the Commander taking part in the battle, but not, I think, when it comes to Supreme Command, because the field is too big for one man to have his attention focussed on one spot.

Next I was going to touch on deputies. The question is whether deputies are going to be of value or not. I think that when you come to Allies you must have a deputy. What we found in the Mediterranean was that there had to be a deputy, because of the difference of administration between various Allied Forces. The American system of administration and the British system of administration are totally different, and by certain Army Acts and Navy Acts and so on certain disciplinary powers are always delegated to the Commander-in-Chief. As S.A.C. in the Mediterranean, I was that designated authority for death sentences in the Mediterranean, and my American Deputy Commander, General Devers, held the same position under the American Act. You will find, therefore, very often, when you have Allies, and certainly on the administrative side, that you have to have a deputy simply to conform to the laws of the country concerned. In a way, therefore, deputies are a good thing. It is not for purposes of seeing that the Com-

mander is kept on the rails, but simply to ensure co-ordination in administration as well as in operations.

The question now is, if the Command of the Army or the Air Force or the Navy is separated from the Headquarters of the Supreme Commander, should the Commander-in-Chief of that particular Service have a deputy with the Supreme Commander who is really his adviser, or can it be done by somebody, say, of a lower calibre, who would be a sort of liaison officer. In the Mediterranean, the main headquarters of the Air were in Italy, with rear headquarters at Algiers, which were my headquarters. We had an American A.O.C.-in-C. and a British Deputy A.O.C.-in-C., and it was always arranged, in order to ensure that I could get proper advice from the Air, that either the Commander, the A.O.C.-in-C., or his Deputy, was always present at my headquarters. In that way it was ensured that one got the advice necessary when the question of certain operations affecting that particular Service cropped up.

Speaking about Resident Ministers, the Resident Ministers were really sent out for political and economic purposes and to direct them, and in many cases the direction for actual operations did not percolate through them, though they always attended the conferences. Actually in the Supreme Allied Headquarters in the Mediterranean I had two administrative political Resident Ministers; the British one was Mr. Macmillan and the American was Mr. Murphy—the two Ms. In that case, however, the S.A.C. was supreme, and all instructions or proclamations went out in the name of the Supreme Allied Command. They both insisted on that. We used to have one or two political conferences a week, and they always insisted that I, as S.A.C., should take the Chair, and one sat on my right and one on my left. All political decisions arrived at at that conference went out in the name of the S.A.C., so you must not feel that a Minister of State would in any way interrupt the chain of direction or directives for war which would come from either the British Chiefs of Staff or the Combined Chiefs of Staff to the actual Commander himself when it comes to operations.

Finally, touching on the Commander himself, my own feeling is that once he is appointed to that Command he has to become international. We have a very fine example of that in Marshal Foch at the end of the 1914-18 War. When he was appointed as the Supreme Commander for the Western Front he dropped his cloak of French nationality and became Allied and international. It is to his credit, and his is an example that other Commanders can follow.

It only remains for me to thank our Lecturer for having come all this way and for having given us such a very good exposition of the ideas to study for the future. We thank him very much for having done so. (*Applause.*)



## RESISTANCE MOVEMENTS IN THE WAR

By MAJOR-GENERAL SIR COLIN GUBBINS, K.C.M.G., D.S.O., M.C.

On Wednesday, 28th January, 1948

FIELD-MARSHAL LORD WILSON OF LIBYA, G.C.B., G.B.E., D.S.O.,  
in the Chair

THE CHAIRMAN: Our Lecturer this afternoon is General Gubbins who ran the Special Operations Executive which, during the War, developed into a world-wide organization for producing resistance movements to the Axis. I think he is known to everybody who worked in the campaign for the work he did, and I am certain that what he is going to tell us will be very interesting.

### LECTURE

I HAVE only a short time in which to deal with a wide subject, involving nearly twenty separate countries, covering the creation of a new and complicated weapon of war, and to explain how its operations were co-ordinated with the operations of the three fighting Services. I am forced, therefore, to deal with the subject rather generally and must take one country as an example when I come to detail. I have selected France for this owing to its military importance and geographical position and because almost all types of S.O.E. operations took place there at various times.

In June, 1940, the British Empire stood alone against the armed might of Germany, whose triumphant forces had overrun Western Europe from the North Cape of Norway to the Pyrenees and were then poised for what seemed the *coup de grâce*—the destruction of Great Britain, and so the elimination of the final obstacle to German world domination. The shock was profound.

Three things were stark clear:—

(a) We were "up against it" and the result would depend alone on what we could do;

(b) Germany was waging total warfare in every sense of the word;

(c) Her success had been greatly assisted by subversive methods long prepared and practised.

We were "up against it" and the only answer was total warfare too, to fight back with any means we could find. And so we come to the story of Resistance which, with the entry of Japan into the War, was to become a world-wide factor in the struggle against totalitarianism. But remember always that "Resistance" could never have begun if the great bases of our strength—primarily these islands, then Malta and Gibraltar, the Middle East, India and Australia, had not been kept inviolate and secure by the action of the three fighting Services.

As I have said, the shock of initial German success was profound, particularly in the occupied territories of Western Europe. France, Belgium, Holland, Denmark and Norway lay as if stunned; only the Poles, toughened by centuries of oppression, were spiritually uncrushed. Yet in all these countries there were hundreds of thousands of individuals who refused to accept defeat and who prayed for the means to continue the struggle.

The British Commonwealth was on the defensive and it was clear that it would be years before invasion would be possible; what could, however, be done in the meantime was to attack the enemy by unorthodox methods: attack his war



potential wherever it was exposed and at least create some running sore to drain his strength and disperse his forces and, finally, when invasion of the Continent did take place, to give the maximum of assistance to the forces of liberation. To undertake this task, an organization—Special Operations Executive, was created which combined the elements of various Government Departments that had been studying on these lines.

Here was the problem and the plan, then : to encourage and enable the peoples of the occupied countries to harass the German war effort at every possible point by sabotage, subversion, go-slow practices, *coup de main* raids, etc., and at the same time to build up secret forces therein, organized, armed and trained to take their part only when the final assault began. These two objects are, in fact, fundamentally incompatible : to divert attention from the creation of secret armies meant avoiding any activity which would attract German attention ; to act offensively entailed attracting the special attention and efforts of the Gestapo and S.S. and the redoubling of vigilance on their part. Not an easy problem, but somehow the two had to be done.

In its simplest terms, this plan involved the ultimate delivery to occupied territory of large numbers of personnel and quantities of arms and explosives. But the first problem was to make contact with those countries, to get information of the possibilities, to find out the prospects of getting local help, and an even more immediate task was to find someone suitable and willing to undertake the first hazardous trip, then to train him and fit him for the job and ensure communication with him when he had landed.

All contact with occupied territories closed when the last British forces returned to Great Britain in 1940, so the first man to go back to any country had to be parachuted " blind " as we say, i.e. there was no one waiting to receive him on the dropping ground, no household ready to give him shelter, conceal his kit, and arrange his onward passage, provide false papers, etc. He just went " blind " and had to use his native wit to establish himself safely and open up communication. His training was, therefore, of the utmost importance.

And so the first organizational steps were taken—the search for suitable personnel, the setting up of training schools, the establishment of research stations for the production of specialized equipment and weapons, of wireless sets capable of being carried by one man, the production of identity papers, ration cards, demobilization papers, etc. ; the provision of foreign currency, research into the methods of the Gestapo, experiments in the dropping of specialized stores from aircraft, and so on. A whole host of preparations had to be initiated before the first man could be dropped and research and development continued throughout the War.

The personnel employed for active operations, whether men or women, came almost entirely from the armed forces of the Allies with, of course, a high proportion of British officers and other ranks and men from the Dominions. They were paid at ordinary Service rates plus parachute pay ; many of the British had been rejected for the Services on account of age or minor infirmities. Signallers had the rank of corporal or higher. This method of recruitment largely obviated the risks of German penetration and subsequent treachery, and of enlisting unsuitable personnel who could not stand the strain. But, as an extra safeguard, all personnel were given a month's preliminary course under very special supervision before even knowing what they were required for, so that if dismissed they would not be a potential danger.

The training course lasted from three to four months, including parachute training, with an additional two to three months for signallers, concluding with a

specialized course on German methods, security precautions generally, "cover" and such-like technicalities. This was the programme for a man already trained as a soldier.

### CONTROL AND PROCEDURE

The Special Operations Executive was the responsibility of a specially nominated Cabinet Minister, but for all its activities of a specifically military nature or which might bring military repercussions, it was operationally under the Chiefs of Staff. This operational control was decentralized concurrently with the appointment of Supreme Commanders so that S.O.E.'s activities could be closely and properly co-ordinated in any theatre with those of the three Services by the theatre commanders concerned. This was not as simple as it sounds and there were many complications, but these were sorted out as experience was gained. As an example of the complications, France remained operationally under the Chiefs of Staff long after the conquest of North Africa and the invasion of Italy, but an S.O.E. base was established alongside General Eisenhower's Headquarters in Algiers from the outset, primarily for work into France, though it dealt also with Corsica which was in General Eisenhower's theatre and with Italy, which later came into his sphere too.

On C.O.S.S.A.C.'s<sup>1</sup> appointment in 1943 to cover the Western European theatre, S.O.E.'s operations therein came under that Headquarters (later, of course, S.H.A.E.F.) and so remained until the end of the War except that Norway eventually was dealt with by Scottish Command and S.O.E. conformed organizationally.

Below the Headquarters of Supreme Commanders and when offensive land operations began, co-ordination was achieved by the employment of Special Force Detachments (S.F. detachments as they were called) at Army Group and Army Headquarters. By this means it was possible to correlate the action of Resistance groups behind the enemy's immediate front with the tactical operations of the armies, and carry out the Army Commander's requirements, e.g. for the demolition of bridges or the prevention of demolitions by the enemy. These detachments were on a normal war establishment, but of course had to have special wireless equipment. Time does not allow of going deeply into these arrangements, but the methods and procedures employed have all been recorded and are available for study if required. The problem is not simple.

### POSITION OF EMIGRÉ GOVERNMENTS

I want you to consider for a moment the position of the *émigré* Governments who sought refuge in this country and the Middle East during the War, because they were of the greatest importance in all S.O.E. work. Above all other considerations, of course, the British Government and people had a high moral obligation towards these occupied peoples. Beyond that, it was clear from the start that the maximum results could be obtained only by the maximum co-operation with those Governments, particularly where they still retained and could continue to retain the confidence of their peoples.

Denmark and France are special cases. Denmark, after token resistance, which was all her weak forces could offer, was made a base for German forces but was not occupied in the same sense as Holland and Norway. The Germans wanted an example of a country which had joined the "New Order" in Europe and was profiting by it, and so the King was allowed to continue to reign and Parliament to rule, no requi-

<sup>1</sup> Chief of Staff, Supreme Allied Commander.

sitioning of food or buildings was allowed; everything was to be normal. This was an intolerable situation to the majority of Danes and to the Allies as well, and had to be changed. It was not, however, until August, 1943, that sabotage under British guidance and with the willing co-operation of the Danes had risen to such heights that the Germans were forced to take over the country, banish the King to his country residence, evict the Government, transport the whole police force to German concentration camps and appoint a German Governor. From that time on sabotage increased a hundredfold. Denmark had joined the war against Germany.

I must deal with France in some detail owing to her special position, due first to her supremely important place, geographically and politically, in Western Europe and her probable selection as the battleground for the most critical phase of the War. Complications arose, due to the original division of the country into Occupied and Unoccupied Zones, the maintenance by the United States of diplomatic relations with Vichy, and the fact that outside France there was no French Government but only a single man trying to rally all Frenchmen and French territories to his flag. And so it remained for a very long time.

As far as clandestine operations in France were concerned, the main result of this complex situation was that the British Government retained direct responsibility for operations in France. This position was maintained until the invasion of Normandy, when all clandestine forces in France, whether led by British or built up by General de Gaulle under the guidance and control of the British, were placed by General Eisenhower under the command of General Koenig, a very right and proper arrangement. That was the proper culmination of French resistance—the resurgence of France as a great Power and her open participation again in the War—factors of immense importance for the future.

Thus from the moment of the fall of France and the commencement of total warfare against Germany, British officers and others, after due training, were parachuted into occupied territories to start the organization of resistance. As regards France, no one knew, no one could tell, how many Frenchmen were for de Gaulle or how many for Vichy and subservience; but we knew that thousands would help the British and waited only for the chance to fight the aggressor and harass him wherever possible, and so we went ahead. Information gradually obtained showed that de Gaulle had a strong following, and soon he was given facilities for beginning the creation of a secret army—a process that was to continue for three and a half years with varying turns of fortune but steadily improving position.

For over-riding reasons of operational security, the control of signals traffic and of the training and despatching of personnel remained with S.O.E., and the teams in the field were organized as far as possible on the British model into close watertight compartments each with its specific area and specific targets, whether for sabotage or for the day of invasion. And so S.O.E. had two sections for France—one for the British "circuits" as they were known, and the other directing and checking the creation of a secret army that would follow de Gaulle, and in which quite a number of British officers took part. So much for France for the moment.

### SABOTAGE

How did all this work progress? You will remember that the general plan, altered in detail from time to time by the Chiefs of Staff according to the change of circumstances, directed the greatest possible hindering of the German war effort



consonant with the building up of secret armies to take the field in open rebellion when required.

The work went ahead as rapidly as physical circumstances permitted, i.e. the availability of recruits, the provision of the necessary aircraft, the production of reliable portable wireless sets, and so on.

Sabotage is a generally useful term which has a hundred special facets. The first picture that springs to mind is of a railway line blown sky-high, of a motor-car exploding mysteriously in the street, of a telegraph line somehow out of order; but there is much more in it than that. Germany had occupied Western Europe with all its wealth of manpower, industry and raw materials which she rapidly harnessed to her war effort—iron ore mines in Norway, munition works in France, ship-building yards in Denmark, aircraft factories in Holland, armaments in Czechoslovakia, coal in Poland, etc. Her war effort was, therefore, open to attack at every point of her war economy.

Attacks were duly delivered. Targets were not picked at random, but after full examination and discussion with the Government Departments concerned, chiefly the Service Departments, the Ministry of Economic Warfare, Chief of Combined Operations, etc. In France and Belgium, in Denmark and Norway, in Greece and Yugoslavia, constant destruction was wrought against vital points in the German war economy, but I have time only to give you a few scattered examples, some carried out by local groups, some by *coup de main* parties from home:

#### France

- (a) The destruction of the Ratier Air Screw factory at Toulouse;
- (b) The destruction of the power supply arrangements for Le Creusot—the biggest armament works in France;
- (c) The demolition of the Gigny barrage on the Saône, holding up German E-boat traffic to the Mediterranean for five critical weeks. This operation was repeated in the following year;
- (d) The demolition of Radio-Paris, used for jamming and propaganda;
- (e) Innumerable power stations and transformers;
- (f) Continuous rail attacks, particularly against supply trains carrying oil to submarine bases.

#### Belgium

- (a) Power stations and transformers destroyed;
- (b) Demolition of locks, etc., on main waterways between Belgium and France;
- (c) Destruction of high tension cables and pylons.

#### Denmark

- (a) Shipyard sabotage, particularly the yards of Burnmeister and Wain;
- (b) Fourteen ships sunk in harbour in the nine months preceding the invasion of Norway;
- (c) Attacks on railways.

#### Norway

- (a) Demolitions at Orkla pyrite mines and destruction of plant;
- (b) Demolition of torpedo and submarine oil stocks at Horten;
- (c) Destruction of Skesco ball-bearing works in Oslo;
- (d) Destruction of the heavy-water factory and stocks at Rjukan.



*Greece*

- (a) Destruction of Gorgopotamos railway bridge ;
- (b) Rail and road demolitions in June, 1943, as diversion for Allied invasion of Sicily ;
- (c) Kidnapping of General Kreipe from Crete ;
- (d) Sinking of German shipping in Piraeus.

*Malaya*

Sinking of 37,000 tons of Japanese shipping in Singapore harbour.

Sabotage as well as being violent can also be "go slow," can be faulty work so that parts do not fit, or parts not delivered ; but this is traceable and may be fastened on particular workers, and so is unpopular, especially among piece rate workers. Sabotage can be the misdirection of railway goods wagons by the simple expedient of changing the destination labels in the marshalling yards—this can produce much chaos. Sabotage can take the form of encouraging "malingering" in the German armed forces, which met with some success ; or the encouragement of desertion provided the means are given to effect it.

## SECRET ARMIES

The object of forming secret armies was to produce at the moment required open armed opposition to the enemy behind his lines, aimed at his most vulnerable points, i.e. his lines of communication, particularly roads and railways ; his communicational systems whether telephone, telegraph, W/T or despatch rider ; his depots and repair organizations—in fact against all the services whose efficient functioning is essential if the troops in the line are to fight with the best ability. A further object frequently stressed in all directives was to provide an armed and disciplined force to maintain order when the Allied invading troops had passed on, an extremely important function.

The timing of the action of these secret armies was eventually decided on as follows by Supreme Commanders concerned :—

*Normandy*—To come into operation just before zero hour on D-day except for such forces reserved to assist the later invasion of France from the South under Field-Marshal Lord Wilson.

*Belgium, Holland and Denmark*—as the Allied Forces approached the frontiers.

*Norway*—to coincide with the arrival of British troops.

*Italy*—on the opening of what proved to be the final offensive.

*Malaya*—to coincide with the landing of the invasion forces ; but I will revert to the Far East later.

As the War developed, and as Allied strategy focussed on the invasion of France and the Low Countries across the Channel as the culminating blow against the main enemy, Germany, so was the importance enhanced of anything that could be done in France to divert German forces from the Normandy beach-heads and to interfere with their systems of supply and communications, particularly during the critical days of the initial landings and the build-up. France, therefore, was top priority for the six months preceding D-day, but of course there were strong claims elsewhere from countries which were containing German forces, such as Greece, and these had to be satisfied in reasonable measure.

## FRANCE

I have tried to explain the particular difficulties of dealing with France—the absence of any recognized authority outside France, the initial division into two

zones—Occupied and Unoccupied, and so on. On the other hand, there were many physical and concrete advantages which France possessed. First there was the wide extent of the country, which is relatively not highly populated, so that the finding of suitable dropping grounds was not very difficult and even pick-up operations by aircraft at night were fairly simple once the technique had been evolved. Secondly, the run for aircraft was comparatively short, so that maximum container loads were almost always possible. Thirdly, France could be approached both from North and South, i.e. from bases in England and Algiers, so that even on the shortest summer nights there was practically no point that could not be reached, though the short summer nights in the Western Theatre were always a problem. A further factor helping French operations was that, compared say with Holland, Belgium, Czechoslovakia or Poland, it was relatively easy to get selected important people back to this country for consultation: there was the aircraft pick-up method; there were the land frontiers and the long coast lines facing England and North Africa.

The invasion of North Africa brought about, of course, another simplification—France was no longer divided into two zones—Occupied and Unoccupied. Two peoples—one suffering under Occupation and the other suffering only under Vichy, became totally Occupied and French resistance by that much hardened and crystallized.

The history of the building up of the secret armies in France, as in other Western European countries though to a lesser degree, was studded with sudden arrests of key men, with discovery of our W/T sets and setbacks of all kinds. But the work was gradually accomplished in spite of a tendency towards centralization and the building up of a military hierarchy, the dangers of which in warfare of this kind are obvious: if the head of a zone is caught with his executive records, tremendous damage will ensue; this happened more than once. Numbers to be built up were decided more by the availability of aircraft to deliver equipment and arms than the numbers willing to serve; the governing factor was not the available supplies but the rate of and volume in which they could be delivered.

From February, 1944, until the end of the first phase of the Allied invasion, special efforts were made for France, using not only aircraft allotted for S.O.E. work but additional aircraft from Bomber and Transport Command. From February to May alone, arms for 60,000 men were safely delivered throughout the length and breadth of France, but mostly to the *Maquis* of the central and South-East, and then after May to the northern sectors which had such an immediate bearing on the Normandy invasion. The weather played an important role in the selection of delivery points. In March alone, there were 200 successful sorties to the *Maquis*—a formidable total.

As 6th June approached, so the pressure for deliveries grew, and so also grew the need for precision both as regards time and place in what was being done. The invasion was planned for Normandy and all Resistance plans had to be aimed at giving the maximum assistance to the initial landing and then to the build-up. Therefore plans had to be sent in advance to France in the shape of micro-films. Whether they concerned railway sabotage, destruction of telephone and W/T communications, or whatever they might be, it was imperative that their possible capture by the Germans should not in any way prejudice the security of operations—in fact, that the most minute examination of those plans should not give any indication as to whether the action was to be mounted across the narrow straits, or on Dieppe and so

to Calais, or West of the Seine, i.e. Normandy or Bordeaux, or the Flemish coasts and Antwerp. So all operational directives were worked out with S.H.A.E.F. to cover these points and to maintain secure the aspect of "locality of the invasion."

But what of time? If Resistance were to help, it must be synchronized, and if the Germans could not deduce place, the deduction of "time" would be of some advantage to them. To cover this point, a relatively simple "stand by" code was evolved which if picked up by the Germans would tell them nothing, but conveyed to the "Field" that they should be on the look out for the "Action" messages. Remember that by 1st June all sorts of things had happened giving clear indications to the Germans that invasion was imminent. And so the "Action" messages went off on 5th June, calling French Resistance to commence action that same evening.

For S.O.E. this was the most critical point of the War—had this job of primary importance been done? To date this could only rest on faith or conjecture. The weapons, the organization, the plan were all there ready—our one thought was how it would go on the day. The answer is a matter of history. The "Plan Vert"—the green plan, for railway demolition started at once. Within the first week of the invasion, 960 railway demolitions out of a planned 1,055 had been well and truly carried out; similarly with communication and road demolitions; and the fighting behind the lines began. By August, 668 locomotives had been destroyed and 2,900 attacks on railways carried out in France alone. Our embarrassment was then to prevent a premature *levée en masse*, a rising of the French people. In this we were not wholly successful, particularly in the case of certain groups in the South of France who fought too early and suffered heavy casualties before the launching of the operation under Field-Marshal Lord Wilson from North Africa. This swept like a wind through Southern France and up the valley of the Rhone to the German frontier and which hemmed in once and for all the German forces struggling to escape from Bordeaux and Toulouse and the South-West of France, before the net should finally trap them all, as it eventually did. The French Forces of the Interior came out into the open; thousands flocked to join and there was no way of stopping them.

Thus began the bloody battles in the Corrèze, in Vercors and in Savoie which at first involved heavy losses to the French though producing a valuable diversion from Normandy, but which three months later saw the F.F.I. still unconquered. In June, 1944, the Germans were employing 5,000 men against Corrèze, 11,000 with artillery against Vercors, and on 20th July the 11th Panzer Division wanted in Normandy was still in Dordogne.

The organized risings, worked out on S.H.A.E.F. instructions, were so immediately effective that on 25th June the first daylight drop of arms in direct support of overt resistance was carried out—76 Liberators, a diversion from the main battle front which was judged by General Eisenhower to be warranted. This was followed on 14th July by a daylight sortie of 400 Liberators, and feeling in France rose to fever height. After that there was no stopping them.

What did all this achieve? Remember that its object was directly to assist the landings in Normandy and the eventual break-out, i.e., (i) to delay the arrival of reinforcements and (ii) to divert troops that might otherwise be used as reinforcements.

I will quote first from an extract from a S.H.A.E.F. paper of 1944:

"The action of the resistance groups South of the River Loire resulted in an average delay of 48 hours in the movement of reinforcements to Normandy and often much longer. The enemy was facing a battlefield behind his lines."



I would like to quote further an extract from a personal letter from General Eisenhower in May, 1945 :

" While no final assessment of the operational value of resistance action has yet been completed, I consider that the disruption of enemy rail communications, the harassing of German road moves and the continual and increasing strain placed on German war economy and internal security services throughout Occupied Europe by the organized forces of Resistance, played a very considerable part in our complete and final victory."

The final military conclusions on the subject were :

" Militarily, organized Resistance helped the main operations of the Allied Expeditionary Force as follows :

- (a) By sapping the enemy's confidence in his own security and flexibility of internal movement.
- (b) By diverting enemy troops to internal security duties and keeping troops thus employed dispersed.
- (c) By causing delay to the movement of enemy troops :
  - (1) concentrating against the Normandy beach-head ;
  - (2) regrouping after the Allied break-out from the beach-head.
- (d) By disrupting enemy tele-communications in France and Belgium.
- (e) By enabling Allied formations to advance with greater speed through being able to dispense with many normal military precautions, e.g., flank protection and mopping up.
- (f) By furnishing military intelligence.
- (g) By providing organized groups of men in liberated areas able to undertake static guard duties at short notice and without further training.

The widespread and continuous sabotage (3,000 confirmed rail cuts between 6th and 27th June) in this field, however, caused an effect outside the capabilities of Allied air effort unless it had been concentrated on railways to the exclusion of other priority tasks. . . . It succeeded in imposing more or less serious delays on all the divisions moved to Normandy from the Mediterranean and forced extensive and intricate detours. The stimulation of resistance in Brittany also delayed moves from that area. . . . *An outstanding example was the delay to the 2nd S.S. Panzer Division* which took two weeks to reach the bridgehead at a crucial time. The main line Toulouse—Tours was virtually closed to German traffic from D-day onward. Both main lines up to the Rhone valley were closed a good part of the time, the route on the right bank at one time for twenty consecutive days by the destruction of the Doux bridge at Tournon. Resistance action in Belgium which began on 8th June, 1944, completed the wide encirclement of the beach-head. Sabotage to the principal rail routes imposed delay not only on troops moving from that country but on reinforcements and stores passing through it from Germany. Constant interruptions were caused on all other lines in France, particularly those capable of carrying heavy tanks, with the consequence that many Tiger tanks from the South finally had to be moved by road and arrived in the battle area too late and not in fighting condition. Troops likewise arrived in a state of extreme disorganization and exhaustion."

The story of the southern invasion of France was the same—a constant battlefield behind the lines. In all, between Normandy and the Côte d'Azur, between ten and twelve German divisions hopelessly cut off and blocked, surrendered, to French Resistance. The cost to the French was considerable, 24,000 men killed, but France



had regained her soul. Some 300,000 of her citizens in organized formations had sprung to the call of arms.

The Battle of Normandy extended, so far as S.O.E. was concerned, from Norway to the Pyrenees, i.e., the whole of German-occupied Western Europe. From the Allied point of view, the immediate objective in 1944 was clear—the final destruction of the German forces in the West. S.O.E.'s directive from S.H.A.E.F. covered not only the *levée en masse* in France, but sabotage on the Belgian railways to isolate the battlefield, destruction on the Danish railroads to prevent the passage of reinforcements southwards, sabotage of Norwegian railways to force the Germans on to the sea routes to become the targets of the Royal Navy and the Royal Air Force. Action went on in an ever mounting crescendo: the railway administration building in Oslo was tottered to the ground; the liner "Donau," fully loaded, was wrecked in Oslo Fjord; in Aarhus and Esbjerg frog-men were busy with their limpets against shipping; in Denmark every railway was wrecked in a dozen places nightly; in Holland block ships were sunk at their moorings. The great port of Antwerp, essential for the supply of the advancing Allies, was saved almost 100 per cent. from German demolition, only three cranes out of 602 being destroyed—an operation due primarily to one gallant Belgian reserve Lieutenant employed in the Port Administration who had, under a general directive, worked out a tactical plan of amazing efficacy.

#### SCANDINAVIA

The results as they affected the movement of German reserves from Scandinavia to the battle front were striking. From Norway, there was a reduction in the rate of movement from four divisions to less than one division a month. From Denmark the moves of two divisions, urgently wanted on the Western Front, were very seriously delayed. During the week 4th–11th February, over a hundred successful attacks were made against the transport provided for these divisions. By the end of the week more than half the 44 trains involved were held up in Denmark and six had been derailed.

#### BELGIUM

In Belgium, as the Allied armies approached, the secret forces were called from sabotage to open guerrilla warfare. During June they had already carried out 153 successful operations, mainly against rail and road communications, and in July this activity was increased to over 800 definite rail-cuts, 42 train derailments and the destruction of 65 road and railway bridges. Now they came out openly to harass the German retreat, then to guide the Allied armies, to provide flank guards, to free Antwerp and to help in every way their own liberation and the destruction of the German armies. They played their part well.

#### ITALY

Before concluding, I must turn for a moment to other theatres. In Italy, from the moment of the armistice in 1943, every effort had been made to create and stimulate the partisan movement in Northern Italy. British and American officers and other ranks, and Italians too, were trained and briefed and dropped by parachute to organize and lead the thousands of Italians who were seeking to help in the liberation of their own country. When Field-Marshal Alexander's final offensive was launched, there were 65,500 Italian partisans organized, armed and equipped to take part, and they were allotted their tasks by the Supreme Commander. They seized Milan, Turin, Genoa and other towns as the Allies advanced, and opened the way for the lightning advance to the Swiss frontier and the total surrender of Kesselring's

forces. They saved from demolition by the retreating Germans the power stations and factories of the Lombardy plain, prepared for that purpose by special German squads; they fought gallantly and well in the common cause.

#### FAR EAST

The operations in the Far East deserve a chapter to themselves but there is no time to-day except for an inadequate resumé. Things began on the fall of Singapore when a small group of officers and men went inland instead of evacuating and fought the Japanese on their lines of communication while their stores lasted and then took to the high mountains to organize resistance. In Burma, it started when one or two individuals "stayed behind" when the Japanese in their first triumphant advance overran the whole country. From these small beginnings in those impenetrable jungles, separated by vast distances from the air bases in India and Ceylon, great things eventually came. By incredible efforts of personal sacrifice and human endurance, an army of several thousand Karens, whose people were the victims of unspeakable Japanese cruelty, was gradually built up by British officers and other ranks parachuted in to organize, equip and train them. When, in 1945, the Fourteenth Army was racing to the capture of Rangoon, it was the Karen Resistance, now grown to 16,000 strong, with a hundred and more British officers and other ranks, which held up the Japanese 17th Division for two critical days. And in that fighting behind their lines and in attempting escape across the Sittang River, 16,000 Japanese were killed and counted by Resistance alone. The wheel had truly turned full circle.

In Borneo it was the same. In this farthest flung theatre in which the British fought, a little group worked alone among the head-hunters, training and leading them successfully against the invader, their sole link with the outside world being a tiny wireless set.

This, then, is the story of Resistance, a little spark that flickered and was almost extinguished at its birth, but which by careful tending and nourishing grew into a flame that eventually swept like a prairie fire. In the build-up years of 1941 and 1942, a few specially allocated aircraft covered Europe by night as best they could, dropping here a man or two, there a ton or two of stores. In 1944, thousands of special sorties were being flown throughout the World and arms and stores for tens of thousands of men were safely delivered against the great day. And when that day came, the Allied forces were reinforced by secret armies who turned the enemy's rear into theatres of chaos and unbelievable turmoil and saved many thousands of Allied lives.

#### CONCLUSION

I would like to give you just a few reflections in conclusion. The late War was the first in which organized resistance in occupied territories was created, directed and supplied from outside in any appreciable degree. The reasons are clear, i.e., the inventions of the aeroplane and of wireless telegraphy, their particular application to this method of war, and the vast areas of occupied territory.

Resistance was a factor which stretched the German Army and its security services far beyond what their High Command had ever contemplated. Judging by initial German strategy in 1940, i.e., the occupation of the Western sea borders from the North Cape to the Pyrenees, it would seem they had read the lesson of history aright and had realized that their failure to defeat us in the 1914-18 War was primarily due to the Royal Navy, particularly to its defeat of the German U-boat campaign, which was then handicapped by the forced passages of the narrow seas before reaching its Atlantic hunting grounds. It may well be that their occupation

of this long coastline in 1940 had as its main object the establishment of submarine bases where blockade would be impossible. Undoubtedly also they hoped to enslave the peoples and the industries to the full support of their war effort. In the end, though this strategy may have helped them initially, they were to pay a terrible price for their violation of all the laws of man, their unprovoked aggression of defenceless peoples, for their unimaginable cruelties, practised on men, women and children alike. They could not prevent sabotage for all their efforts. They could not prevent the organization of secret armies though they knew well it was going on.

The story of Resistance is well enough known in all the countries that were occupied, though practically unknown here at home; in all those countries arose a great wave of gratitude to the British who were giving them the chance actively to take part in the war for freedom and to lift their heads in pride again when the final victory came, in which they had played their part. The presence of British officers, British other ranks and British women among these peoples showed them that the British were prepared to take the same risks as they were being asked to run themselves. We owe the conception and direction of this task to the vision and humanitarianism of our great war leaders.

I should like to mention particularly the British other rank W/T operators, all of course volunteers, who kept their schedules with "base" from the icy mountains of Yugoslavia or the rain-sodden jungles of Malaya and Burma—always cheerful, always giving of their best. When large parts of Europe were liberated, they were brought home for refurbishing and rest; many had been up to two years in enemy territory. But when their leave was up, they volunteered as one man for the Far East and within three weeks of reaching India they had parachuted again into Burma, or Malaya, or Siam, back on the job. Some eighty officers, their task in France completed, also went East.

Lastly, I should like to say that what Resistance actually entailed through the long years of dreadful night in the occupied territories was a day-to-day battle with the Gestapo, the Quislings and the Japanese secret police, one long continuous struggle, with torture and unbelievable suffering and death waiting round every corner at every moment. Yet there were countless thousands who undertook the task, to whom all that mattered was their own eternal spiritual indestructibility. They dedicated themselves to a cause they knew to be higher than self.

#### DISCUSSION

THE CHAIRMAN: In the book *Operation Victory* it is stated that British intervention in Greece had little or no effect upon the start of resistance movements either in that country or in Yugoslavia, and I should be glad if the Lecturer would say whether that was the case or otherwise.

THE LECTURER: The two things are really interlocked, but the most important thing of all was the establishment of contact in Greece and the making of preliminary arrangements during the presence of British forces there. As I pointed out, in 1940 when British forces were evacuated from Western Europe there was not a single contact of any kind with occupied Western Europe until somebody was dropped back there. In Greece it was different; the British Army fought there and contacts were made. If we could have had the same facilities in Western Europe as there were in Greece we should have made a quicker and better start. Obviously, the presence of British forces in Greece greatly encouraged Yugoslavia to fight and not to accept the German terms.

COMMANDER L. L. M. McGEACH, R.N.: As a result of the experience of S.O.E. during the War what is now considered to be the status of a man fighting behind enemy lines



under such an organization as the S.O.E. ? There must, to my mind, be some difference between his status as a fighting man and an agent pure and simple who, in international relations, is regarded as being fair game if caught.

THE LECTURER : If you are operating behind the enemy's lines and if you are not wearing any badge of distinction to show that you are a member of some armed force, you can, I believe, by international law be shot if captured. It is only if you are wearing a distinguishing mark and are part of an organized body with a hierarchy of some kind that you are entitled to be treated as a prisoner of war.

When the invasion of Normandy began, General Eisenhower proclaimed to the Germans that the French Forces of the Interior were to be accorded recognition as properly constituted military forces and were not to be treated as spies. They had an organization, they all wore arm bands, and they were fighting openly in the War. Beyond that there is no distinction that I know of. Of course, there was no status for anyone in the eyes of some Germans ; if they wanted to shoot anybody they did so without regard to status ; they actually executed certain men of the Regular forces captured in Normandy.

LIEUT.-COLONEL B. W. TOBIN : Did the people that met members of the S.O.E. on the spot receive any sort of pay, or were they self-supporting ?

THE LECTURER : On the whole a limited number had to live in complete clandestinity, and if you live that way you cannot as a general rule earn a livelihood. By and large they got nothing until they came into the regular forces. The problem of feeding was, of course, an extremely difficult one. The Germans knew that the *Maquis* were getting food from villages, but they were never sure which village it was. Besides dropping arms we dropped a great deal of food, as well as boots and uniforms, the last two items, of course, not always requiring parachutes.

MAJOR J. R. HARE : What would you say was the total number of resistance people involved throughout the whole World ?

THE LECTURER : A total in all countries of something like 500,000 is possibly a reasonable figure. As I said, it was not a shortage of supplies which held up the largest possible force, but it was the delivery of those supplies at the right time and place.

#### THE CHAIRMAN

I am sure we all agree that we have had a most interesting lecture on the Special Operations Executive. As you know, its scope is so big that General Gubbins could really only touch upon one portion, but that portion was the most important and one which we all know.

If it should unfortunately become necessary to start such an organization again in the future, one wonders whether it should be run by a Minister in Great Britain who is not in the War Cabinet. It was run in the last war by the Minister of Economic Warfare and my own experience was that in the early days there were a lot of heated bearings because so many people were implicated in what was called "putting it across." First of all there was the Air Force who were very much interested in it because aircraft had to be taken off other jobs to do the work, although there were never enough to go round ; then S.O.E. had its own Executive which wanted certain things ; the Foreign Office also had its own ideas, which were very often contrary to the ideas of S.O.E.; and then the Commanders-in-Chief's Committee in the Middle East had their strategy to carry out. So there were times when there were many heated bearings upon which oil had to be poured. I feel that if the necessity should arise in the future, it would be well worth considering whether or not the whole organization should come under the Minister of Defence. I think that would ease the situation.

Another matter which has to be considered in this movement is the question of information. The Lecturer mentioned *émigré* Governments, and it struck me during the last war how the lessons to be learnt from the French Revolutionary wars of 150 years ago concerning *émigré* governments were forgotten. We appear to forget that their informa-



tion fails in many cases to be objective, and you may get distinct political bias in that information which may lead you into pitfalls. One feels that information with the object of raising Resistance movements must be treated as operational or technical and not be confounded with information from other sources, and I think that we, as opposed to the United States, were right in keeping the two things separate.

It is always easy to get a show going when you are winning, and I do think that we owe a token of commendation to those who started this movement before we were winning. It is to those early people who went unknown and blind into these countries that the credit must go for being the pioneers of a very fine show.

From 1943 onwards I think the movement worked very well with the strategical and tactical picture. The first thing I did when I took over in 1943 was to insist that an S.O.E. staff officer attended the Commanders-in-Chief's daily conference so that day to day information would be available, and I also saw that he was in with the Director of Military Operations in the study of all plans.

There is a point upon which the Lecturer doubtless would have said more if there had been time, and that is the important question of the control of outbreaks, and how important it is to ensure that there is no premature explosion. The D-day operations and those which took place on 14th August in the South of France were admirably controlled from the point of view of outbreaks, but on the other hand you have the tragic outbreak in Warsaw where the resistance movement arose within the city with the result that most of the inhabitants were eliminated. This of course was no concern of S.O.E. but was a purely Polish affair, directed locally. Also, on the Axis side, you have the premature explosion in Iraq in 1941 which turned out to be a squib that went off too soon because the Germans could not support it. Resistance has to be kept well in hand until the time is appropriate to let it off.

From the Army point of view, the thing which struck me was the degree of excellence achieved by the signallers, particularly in the Balkan operations, and the way they managed to keep their wireless sets going at long distances and in very bad weather conditions. They managed to get their reports through with extraordinary accuracy, and I do not think they were ever picked up by the enemy. That part of the S.O.E. organization certainly deserves commendation. The training received by those signallers and the way in which they were taught to look after their sets in rough conditions added to the success of the movement.

It now only remains for me on your behalf to thank the Lecturer very much for coming here and giving us such an interesting talk. (*Applause.*)

THE LECTURER: Thank you very much indeed. I should like to thank Lord Wilson for what he has said to-day, and also thank him for all the help he gave me during the War.

---

## THE STRATEGIC BOMBER OFFENSIVE AGAINST GERMANY

By AIR CHIEF MARSHAL SIR NORMAN BOTTOMLEY, K.C.B., C.I.E., D.S.O., A.F.C.

On Wednesday, 18th February, 1948, at 3 p.m.

THE RIGHT HON. SIR ARCHIBALD SINCLAIR, K.T., P.C., C.M.G.,  
in the Chair

THE CHAIRMAN: The significance of the subject and the war experience of the speaker alike invest this lecture with quite unusual interest and importance.

Soon after I went to the Air Ministry in May, 1940, I visited Bomber Command, and there I met our speaker this afternoon for the first time. The Commander-in-Chief was Sir Charles Portal. The Air Officer Administration was Air Vice-Marshal Linnell, whose death three years later was a grievous loss to the Service and to the Country. The Senior Air Staff Officer was Air Vice-Marshal Bottomley. This formidable team was soon dispersed. Those officers were required in positions of even greater authority in the conduct of the War, but it was on the foundations which they laid that the huge structure of our air offensive against Germany and Italy was reared. In November, 1940, Air Vice-Marshal Bottomley took over and commanded 5 Group—the Hampden Group, famous for sea mining and the mining of canals. In the middle of 1941 he came to the Air Ministry as the Deputy Chief of the Air Staff, and there he remained, cool, alert, wise, indefatigable, indispensable, until September, 1945. He then became the Commander-in-Chief Bomber Command until he was appointed Inspector General of the Royal Air Force, from which post he retired at his own request at the end of last year.

Two of his outstanding qualities will probably be reflected in his lecture this afternoon. First, whatever the ramifications and complications of the problem, nothing could ever distract his mind from the main point. His eye was always as true to the ball as the compass needle is to the Pole. Secondly, his transparent loyalty and sincerity made him an ideal comrade and diplomat. No man did more than he did to tighten the bonds of personal friendship and military understanding between our American allies and ourselves, and thus to develop to its full power, range and flexibility the striking force of the combined Anglo-American air offensive.

So, too, in his unswerving loyalty to and faith in his own Service, he never lost sight of the fundamental truth that the Navy, Army and the Air Force are all members of one team. Whatever changes in military doctrine and methods the future may bring forth, surely one lesson from our experience in the last war will remain unalterably true, and that is the need for the greatest possible integration in a common plan of the three fighting Services.

I will now call upon Sir Norman Bottomley.

### LECTURE

**M**AY I first of all say that it is impossible to discuss the strategic air offensive of the British Air Forces against Germany, unless in relation to the work of the American Air Forces. My talk is therefore of the Combined Anglo-American Bomber Offensive. In the second place, I am sure you realize that it would be quite impossible, in the time available, to give a comprehensive account of this combined bomber offensive. All that I can hope to do to-day is to take a few outstanding features of this fascinating air campaign and try to explain their reason and their significance.

I suppose the aim of any review such as I am attempting should be to deduce

certain lessons which might be of value to us in the conduct of future war. I hope I can point some lessons, but I don't intend to try to forecast the nature and conditions of future air warfare. We know so little of some of the possible new agents and so little of future conditions, such as supersonic flight, that I must confine my remarks and possible lessons to the broadest aspects of air warfare.

There are many interesting features of this campaign which are worthy of study but I think those which might interest you most are such questions as :—

Day bombing as opposed to night bombing ;

Area bombing compared with the bombing of precise targets ;

The reasons for the choice of the various target systems we attacked ;

The extent to which strategic bombers were able to support the armies and the navies ;

How control of the strategic air forces was exercised at various stages ;

The effort expended and what it achieved, and finally, the important question—what were the main lessons ?

### SCALE OF EFFORT

Let me begin by giving you some background which will put some of these questions into their proper perspective. The first concerns the progressive weight of bombs dropped on Germany throughout the War. Although most effective bombing attacks were delivered on the enemy before January, 1943, it is correct to say that the real strategic bomber offensive did not begin—and indeed I think it is correct to say that it was not properly conceived—until January, 1943. That, as you will remember, was the date of the Casablanca Conference, when Anglo-American grand strategy was thoroughly reviewed and settled for the first time.

It would help you to realize how relatively little it was possible to achieve before that date if I were to give you some figures to indicate broadly the progressive weight of bombs dropped during the six years of war. The tonnage dropped in 1940 was about 15,000 ; in 1941 it was 35,000 ; in 1942, 54,000 ; in 1943 it jumped to nearly a quarter of a million tons ; whilst in 1944 it was well over a million tons. In just over four months in 1945 nearly half a million tons were dropped.

It is significant that of the total tonnage dropped by the Allied Air Forces in Europe in the six years of war, half was dropped in the last year after D-day ; and of the tonnage dropped on Germany itself, three-quarters was dropped after D-day. That gives some idea as to the short period during which the bomber offensive was delivering a really effective weight of effort. This is a very significant feature, because it shows that if your air striking force is not really powerful at the beginning of a war, it takes a long time to create and consolidate an effective force, and it takes a long time to gain the battle for air superiority to enable the force to operate decisively.

These figures of tonnage dropped do not mean that little was achieved by the combined bomber forces up to the end of 1942. These forces certainly made great contributions to the War, particularly in a defensive role—the support of the retreat and withdrawal of our armies from the Continent, the attacks on the invasion ports, U-boat bases, capital ships, and not least, the mine-laying campaign. But most of all, this period was one of development and consolidation both for the Americans and ourselves.

### DAY AND NIGHT BOMBING

Bomber Command had tried daylight bombing in the early part of the War, but these early experiences involved losses which showed that it was impracticable.



It was impracticable because of the inferior performance and armament of our bombers as compared with the enemy fighters, and because of our lack of long-range escort fighter aircraft. The theory which we had previously held between the wars that a well-drilled heavy bomber formation could fight its way to the target and back to its base had left us without long-range escort fighters. But that theory had been quickly shown to be unreal. That was a lesson which the Americans were soon to learn. The design and development of our own fighter aircraft had always been concerned with air defence and the interception problem, and the need for high speed and high rate of climb. It was impossible to convert these aircraft to long-range fighters, and our resources did not allow of our producing both classes of fighters at that time.

The early experiences of the War therefore drove Bomber Command to the development of a technique of night bombardment which was to be the main form of its strategic operations for the rest of the War.

The attitude of the American Air Force towards this problem, and the development of their tactics in Europe, make an interesting comparison. The first groups of American bombers arrived in this country in the Spring of 1942. They came with a firm determination to fly by day and to hit precise targets in Germany. Their methods of operation arose from American naval strategy which called for long-range land-based bombers with precision bombsights with which to attack moving targets at sea. Their role also called for aircraft with armament good enough to meet attacks by carrier-borne fighters. Our own experience caused many to doubt whether they would achieve their aim, but in their characteristic style they set about developing their daylight tactics, testing out their equipment against targets in enemy occupied countries, and giving their crews experience during the build-up of their forces. But it was evident as soon as they started their daylight operations over Europe that even their heavy armament and high performance aircraft were not good enough to deal with the German fighters. The Americans were not limited either by resources or by the problems of home defence and of fighter interception, and they were therefore able to concentrate on building up a force of long-range escort fighters to make it possible for them to penetrate deeply into Germany. In any event, their bombers had a much higher ceiling than ours, and therefore from the point of view of avoidance of anti-aircraft fire, they were also more favourably placed for day bombing than we were.

#### AREA BOMBING—BOMBING OF PRECISE TARGETS

The next interesting point of comparison between our two forces was the persistence of the Americans in attempts at bombing precise targets as opposed to areas. The difference arose again chiefly from their choice of day bombing as opposed to night bombing. There were many operational factors which thrust on the R.A.F. the necessity for turning to area attacks. I have already spoken of the absence of suitable escort fighters, and of our costly attempts at daylight bombing. Bomber Command turned to night bombing only to find that they were unable, at that time, to locate and bomb specific targets with sufficient accuracy to give satisfactory results. Without really clear weather and moonlight, it was impossible to see by night a small target. When they turned to bombing by moonlight, prohibitive losses again followed.

It was not until 1943 and 1944 that really effective blind bombing aids came into use. Indeed, it is true to say that it was not until 1944 that Bomber Command found it possible to deliver a heavy concentrated night attack with real precision.



Those were the main factors which contributed to weigh the scales in Bomber Command in favour of the attack of industrial and town areas.

It is interesting to note that throughout the whole war, 46 per cent. of the total effort of Bomber Command, representing nearly half a million tons of bombs, was aimed at German industrial areas. The next highest percentage was 14 per cent. directed against transportation targets. On the other hand, generally speaking, the Americans concentrated on the specific targets considered to be vital to German war economy.

Although there were many arguments brought forward at the time to support the policy of area attacks on grounds of economic effects and effects on morale, it was mainly operational factors which determined the policy. The question of air bombardment of industrial areas as opposed to the attack of precise objectives is one of the most interesting studies of the War. Sir Arthur Harris himself held strong views as to the efficacy of this type of bombardment. In his recently-published book he states that the experience of the War proved that, apart from a very small number of targets of special importance, the enemy's sinews of war were to be found in his industrial cities, and that the quickest way of winning the War was to destroy the enemy's industry generally.

It is interesting to read what General Arnold, the then Commanding General of the U.S.A.A.F., has to say on this subject. In his final report which has been made public, he writes :—

"Indiscriminate widespread destruction of enemy industry is simply a waste of effort . . . . Examination of any national economy will disclose several specific industries or other national activities without which the nation cannot effectively carry on modern warfare."

The question naturally arises as to whether this heavy scale of attack against industrial areas was justified at the time. There is no question that these attacks had a considerable effect on the German war effort, but it is very questionable whether the effect in itself was ever critical. In the first place, the forces available in Bomber Command were inadequate for the task, especially in view of the calls which were made on them at a later date for the support of the assault on the Continent. In the second place, contrary to general belief at the time, it has since been found that German war production was not really stretched until late in the War, probably some time in 1944. Up to that time there was always some considerable slack in the economic machine, and the enemy was able to call on this in emergencies.

But if they did nothing else, these area attacks placed on the Germans a tremendous repair burden and succeeded in causing them to disperse throughout Germany an army of A.A. defenders, amounting in 1943 to some 600,000 and in 1944 to nearly 900,000—and that was excluding A.R.P. workers and repair gangs. That figure was almost the equivalent of the total strength of the Royal Air Force throughout the World at that time.

But this offensive, particularly of Bomber Command, did far more. It forced the enemy on to the defensive. It forced him to concentrate on building fighters and A.A. guns instead of bombers with which to hit us and to hit the Russians. Indeed, this offensive drew off a great proportion of German fighters from the Russian front.

This question of area bombing as opposed to the attack of precise targets or precise target systems, may prove one of the most controversial issues in the study

of the War. It will certainly prove a most interesting question when studied in relation to the new forms of warfare which the future may produce, and of great importance in the future of air power.

### TARGET SYSTEMS

The next feature I will touch on is the question of the various target systems attacked. Anyone studying the various lists of targets which were attacked from time to time throughout the War, might find it difficult to recognize from the pattern any constant or fixed aim towards which the operations were directed. There were many factors which make it difficult to recognize or to appreciate any fixed aim. Chief amongst these were the changing defensive needs which confronted the Allies until they were properly established on the Continent. Weather conditions themselves, as well as the needs of strategy, and particularly the need for surprise, necessitated a changing pattern of targets and target systems. But behind it all was the aim which was laid down in 1943 at the Casablanca Conference. This was expressed as :—

“The progressive destruction of the German military, industrial and economic system and the undermining of the morale of the German people to a point where their capacity for armed resistance is fatally weakened.”

That strategic concept endured to the end of the War, but the priority of objectives attacked changed from time to time to meet the varying strategic situation, and particularly to meet the needs of establishing ourselves on the Continent. In general, however, three outstanding target systems were attacked from 1943 onwards. They were :—

- The German Air Force industry ;
- The transportation system ;
- The oil industry.

Let me say a few words first of all on the German Air Force industry.

#### ATTACK ON THE GERMAN AIR FORCE

The attack on German air power, particularly in the earlier stages, arose from the need for arresting the growth of the German fighter force, so as to give a reasonable freedom to our bombers to attack the main target systems which were considered vital to the enemy's war economy. This offensive was an essential part of the struggle for air superiority. It was directed not only against enemy airframe assembly factories and airfields, but against the enemy air force in the air.

Strangely enough, in spite of heavy attacks against their aircraft industry, the Germans succeeded in 1943 and 1944 in increasing their fighter production, largely by dispersion ; but there is no question that as a result of the Combined Air Offensive the fighting power of the German Air Force declined rapidly, especially during 1944. This was clearly shown in the diminishing opposition met first by the American day bombers, and later to some extent by the night bombers.

The greatest factor responsible for the change was the battle wastage imposed on German pilots and their equipment. In 1942, the number of single-engined fighters in enemy operational units destroyed, or more than 10 per cent. damaged, totalled nearly 4,000. In 1943 it had risen to nearly 11,000, and in 1944 it had jumped to 16,000.

There were, of course, other factors which determined the outcome of this battle, such as the deterioration of the standard of G.A.F. training, the drain of G.A.F. personnel to the Army, and the shortage of fuel. But whatever factors we consider,

we shall find that in building up a situation of air superiority which was an absolute pre-requisite of the land assault on Europe and of our ability to bomb freely in Germany, the greatest contribution made by any force was made by the Strategic Air Forces. As the Germans themselves said, the air war was fought over their own living space—not over ours nor yet over the land and sea battlefields.

#### CONTROL OF STRATEGIC AIR FORCES

Before I go on to describe the offensive against transportation and other target systems, I feel it would be wise to say a word on the system of control of the British and American Strategic Air Forces, and how this varied to meet strategic needs. From the beginning of 1943 when the strategic air offensive began, the control of the Allied Strategic Air Forces in Europe had rested with the Combined Chiefs of Staff, and our own Chief of the Air Staff—Sir Charles Portal, as he then was—had acted as their local agent in directing and co-ordinating the efforts of the heavy bombers. With effect from mid-April, 1944, the control of these forces was transferred to General Eisenhower. That was part of the agreed plan to concentrate all available effort on the support of the all-important assault on the Continent. Incidentally, the Supreme Commander immediately delegated his authority to the airman who had been appointed his Deputy Commander—Air Chief Marshal Sir Arthur Tedder, as he was then.

On the change of control of these forces, General Eisenhower issued a new directive. In this directive the particular mission of the Strategic Air Forces was stated as:—

(a) First, to destroy the German Air Force and particularly the German fighter force, and to destroy and disorganize the facilities supporting them.

(b) Secondly, to destroy and disrupt the enemy's rail communications, particularly those affecting the enemy's movement towards the lodgment area.

I have already spoken of the Allied offensive against the G.A.F. and the extent to which air superiority was achieved. It was virtually complete, and by D-day there was no effective air opposition to this greatest amphibious operation of all history. In his report General Eisenhower stated:—

“Without the overwhelming mastery in the air which was attained by D-day, our assault against the Continent would have been a most hazardous if not impossible undertaking.”

#### PRE-INVASION ATTACK OF ENEMY TRANSPORTATION SYSTEM

The main pre-invasion plan for the Strategic Air Forces was to paralyse the entire railway system from the Rhine forward to the assault area. This was to be tackled by the destruction of rail depots with their associated repair and maintenance facilities. Any damage to marshalling areas, rolling-stock, or through main lines was to be regarded as bonus. The targets were shared between Bomber Command, the American 8th Air Force, the Tactical Air Forces; even the American 15th Air Force contributed to the plan from their bases in Italy. Incidentally, one of the main considerations in this plan was the avoidance of casualties to the French civilian population. This is an outstanding example of the needs of military necessity having to be modified to meet political needs. Sir Archibald Sinclair, as Secretary of State for Air at that time, will well remember the care with which these requirements had to be balanced.

The best indication of the success which was achieved in this three months



offensive against the railways is given in General Eisenhower's report to the Combined Chiefs of Staff. Here is what he says :—

" By D-day, the Strategic Air Forces together with the Tactical Air Forces had so successfully performed their mission of disrupting enemy communications that there was a chronic shortage of locomotives and cars ; repair facilities were inadequate, coal reserves reduced to six days' supply, and 74 bridges and tunnels leading to the battle area were impassable. The communications chaos . . . produced had a fatal effect on the enemy's attempt at reinforcement to the threatened areas after our landing."

There were various other tasks which the Strategic Air Forces had to undertake in connection with the assault, particularly the attack of coast defences, radar stations, wireless stations, and sea mining of U-boat bases and approaches to traffic lanes across the Channel. Then as the armies broke out of the beach-head, the combined bomber forces continued their attacks on enemy transportation, but were also called upon to give direct support to the armies by striking at enemy troop concentrations and strong-points in the battle area itself.

#### VALUE OF DIRECT SUPPORT BY HEAVY BOMBERS

It is difficult to assess the real value of these close support attacks—attacks such as were made by Bomber Command at Caen, or by the U.S. 8th Air Force at St. Lo-Perrier. Some of them were followed by conspicuous military successes. But generally speaking, examination of the ground immediately after an advance failed to show that these heavy air attacks had succeeded in destroying large numbers of personnel, guns or armour. Moreover, in many cases heavy bombardment of up to 10 tons per acre resulted in such cratering and demolition that the advance of our leading ground formations, and particularly tanks, was seriously hindered. The general view which seemed to prevail at the time, and which later investigations by our survey teams has not altered, was that in so far as these attacks contributed to the successes of the Army, they did so principally by demoralization of enemy troops, and by the inspiration given to our own troops. A lesson learned from these operations was that full advantage of these conditions can be gained only if an advance on the ground follows immediately after the air bombardment. Incidentally, I should say that between 7th July, 1944, and the end of the War, 100,000 tons of bombs were used in this type of Army support—a very considerable proportion of our effort.

By September, 1944, the Armies were so well established on the Continent that it was judged that direct control of the Strategic Air Forces by General Eisenhower was no longer justified. Control had of course been allotted to him temporarily and specifically for the critical task of establishing his armies on the Continent. Indeed the directive given him had stated that this control would be subject to review when the lodgment had been successfully established. Control was then assumed by the Combined Chiefs of Staff.

The new period of control by the Combined Chiefs of Staff began with the issue, on 16th September, of a directive which gave priority to the enemy's petroleum industry with special emphasis on petrol.

#### OIL OFFENSIVE

Measured in terms of ultimate results achieved, the two most important target systems which were systematically attacked by our bombers during the War were undoubtedly oil and transportation. Their importance had always been recognized



from the very beginning of the War, and the two systems had appeared from time to time in the earliest directives. But we had never had the degree of air superiority or sufficient forces to attack these objectives properly before 1944. Even whilst the bomber forces were heavily committed to the support of the assault on the Continent, the oil offensive had been given some importance. The attacks on this system started seriously in mid-June, 1944, Bomber Command attacking plants in the Ruhr, while the American forces, from bases in England, attacked the remaining plants in Central and Eastern Germany, and the American 15th Air Force from Italian bases attacked targets in Austria, Hungary, Poland and Silesia. This was a splendid example of a comprehensive and well co-ordinated air offensive.

By September, 1944, production had been reduced to about 20 per cent., and a critical position had been achieved. The situation became so desperate that Speer was compelled to appoint a special production chief to take complete charge of repair, rebuilding and dispersal of bombed oil plants, and with Hitler's approval he gave him top priority in men and materials. 350,000 men worked day and night on this job.

Winter weather reduced the opportunities for day attack on the most distant plants, but in the New Year of 1945, leeway was made up both by the Americans and ourselves, by persistent attempts at blind bombing. As the weather improved, a series of brilliant attacks on such great plants as Politz, Leuna and Bruh were carried out, and by the end of April production was down to 5 per cent. of all fuels and down to 2 per cent. of petrol. The progressive shortage of oil made itself felt in all arms and on all fronts. The Russians have never been very vocal as to our achievements in the last war, but in this case, Marshal Stalin himself has testified that the Allied oil offensive played an important part in the final sweeping Russian victories. The oil offensive was certainly a decisive factor in the defeat of the German armed forces.

#### POST-INVASION OFFENSIVE AGAINST ENEMY TRANSPORTATION SYSTEM

After the reversion of control to the Combined Chiefs of Staff, the attack on enemy transportation in its widest sense continued to be combined with the attack on oil. Indeed it is scarcely possible to differentiate between the effects of the oil offensive and the offensive against transportation. To quote a recent lecture by Lord Tedder, oil and transportation were :

"the one common denominator of Germany's war effort—from the political control at the top down to the supply of the troops in the front line."

Whilst our armies advanced to the Rhine, the railway systems serving the enemy's front line were pounded day and night by heavy bombers; at the same time the Tactical Air Force pounced on anything which moved on rail or road in the forward areas.

As a result of this comprehensive offensive, by the time we reached the Rhine the system of railways in an area from Cassel to Mannheim, West to the Rhine, and along both sides of the Rhine, was in a state of chaos. The main waterways suffered similarly, Bomber Command keeping the main canals out of commission almost continuously from September, 1944.

In particular, these attacks on transportation vitally affected the coal industry on which German economy rested. We in this country know only too well what that dependence on coal means! When the Russians captured the Silesian coalfields, the Ruhr was the only remaining source of hard coal left to Germany. A combined tactical and strategical plan was therefore devised for isolating the coal-bearing

Rhineland from the East. This plan also aimed at isolating the Rhineland in preparation for the Allied crossing. The plan was completely successful. Coal piled up at the pit-heads of the Ruhr and could not be distributed. Electricity and gas plants began to close down; and so did industries all over Germany.

In December, Speer had already reported to Hitler:—

“The enemy has recognized that systematic attacks on our communications may have a most decisive effect on all spheres of our conduct of the war.”

In March, 1945, largely as a result of continued Allied attacks on transportation, and as a result of the cutting of coal supplies, shipping, communications, gas and electricity plants, Speer reported to Hitler:—

“The final collapse of the German economy may be counted on with certainty within four to eight weeks.”

Events proved that his forecast, and the reasons for it were certainly correct.

#### SUPPORT OF THE WAR AT SEA

I am afraid that I might be under fire from the Navy if I failed to mention something about the use of the Strategic Air Forces in support of the war at sea. Under this heading I would like to touch on the U-boat offensive because it always loomed large as a defensive commitment throughout the War, and I would like to add a word about mine-laying by Bomber Command.

#### OFFENSIVE AGAINST U-BOATS

The greatest menace which faced us at sea during the late war was that of the enemy U-boats. Criticism has been made that the Strategic Air Forces did not play sufficient role in countering this menace. I think the criticism is ill-founded. Indeed, some 100,000 tons of bombs were dropped—the bulk of it in area attacks—on targets connected with the construction of U-boats. That figure represented 6.5 per cent. of all bombs dropped on Germany during the War. One quarter of that figure was expended in precision attacks against U-boat targets. Examination after the War has shown, however, that it was the offensive against transportation which ultimately brought the U-boat industry to a standstill.

It has been suggested that since the area attacks of Bomber Command had no critical effect either on the enemy's war economy or on his morale, certainly up to the end of 1943, we would have been wiser to cut them out, and to devote ourselves either to helping in the war at sea, or to a still greater development and consolidation in order to achieve, at a much earlier stage, the standard of precision bombing which Bomber Command achieved, say, by mid-1944. To this I would say first, that it is of interest to note that of the 19 new squadrons formed in Bomber Command in 1942, 13 were transferred either to Coastal Command to help in the Battle of the Atlantic, or to the Mediterranean or Indian theatres to co-operate with the armies. Secondly, I believe that either project suggested would have been fatal to the operational efficiency of the Command. The operational and tactical experience gained by Bomber Command during the earlier period of area attacks—the only type of bombing tactically possible at the time—was essential to the operational development of the Command and to the building up and maintenance of its morale. Battle experience is the essence of the life of a strategic air force. Bomber Command could not have afforded to forego it in either of these ways. I doubt indeed whether in those dark days our military or political Chiefs could have stood for a situation in which the only instrument we had with which we could bear directly on our enemy was broken up and devoted to a purely defensive role.

## MINELAYING

I think one of the main contributions which the strategic air forces made in the conduct of sea warfare was in the minelaying campaign by Bomber Command. During the War, Bomber Command laid 47,000 mines which were responsible for sinking or damaging over 900 enemy ships. The Command was in fact responsible for over 30 per cent. of sinkings inflicted on enemy merchant shipping in the north-western waters. That was additional to their attacks on German main naval units, of which ten were sunk including the "Tirpitz," "Lutzow" and "Scheer." That, I am sure you will agree, was no mean contribution to the war at sea.

## CONTRIBUTION TO WINNING THE WAR

Any review of the conduct of the Combined Bomber Offensive, such as I have made, would be incomplete without some attempt, however brief, at an assessment of its contribution to the winning of the War. I have suggested that the vast tonnage of bombs dropped on German cities, particularly by Bomber Command, did not critically reduce enemy industrial production. Whether or not we were wrong as to the location of enemy productive capacity and as to its flexibility and reserves, the main reason of failure was that the scale and frequency of our area attacks were insufficient to check the degree of recovery of productivity. Even if we take what were perhaps the most devastating attacks of the War—those on Hamburg in July/August, 1943, we find that the city recovered 80 per cent. of its former productivity within five months. The American Strategic Bombing Survey reported:—

"It is easier to destroy the physical structure of a city than to wipe out all its economic life."

That certainly applied to Germany, where we found later that less than one-half of productive capacity was in the large towns and cities. All these factors point to the need for the most accurate economic intelligence in the conduct of the strategic air offensive.

I think it is now clear also that these devastating night attacks, even coupled with the American day attacks, did not critically undermine the enemy's morale. Widespread bombing of cities and industrial areas certainly succeeded in gravely lowering morale, but its effect on behaviour was not decisive. The severity of German controls remained largely unaffected. This brings out the need for a very thorough appreciation of social and political conditions when we are considering the moral effects of air bombardment. It is another aspect of war to which our future intelligence must look most carefully.

I pointed out that the direct attack on the German fighter industry did not generally succeed in reducing production, and that our policy in that respect might be open to criticism; but we do know that these attacks did seriously affect planned production; and in any event they certainly produced some of the biggest fighter reactions which resulted in heavy attrition on the enemy.

As long as the danger of recovery of the enemy Air Force remained, we could not afford to leave the aircraft industry free to develop in any way—there was always the threat of jet fighters for example. It seems that some such security measures against an enemy air force and aircraft industry will generally be necessary in the gaining and maintaining of air superiority.

I have outlined the extent to which the offensive against oil and transportation paralysed the enemy's war economy. Later detailed examination by the Americans and ourselves has shown that these combined offensives proved the most effective



method—to use the words of the Casablanca Directive—of “progressively destroying and disorganizing the German military, industrial and economic system,” and in fact, of undermining the morale of the German people, however indirect the method.

The question is often asked as to whether the successful winning of the War could have been achieved solely or primarily by a powerful strategic air force. I do not think that this is a question which can be easily, and certainly not accurately answered on the experience of the last war. In the first place, we in this country devoted over the whole period of the War, not more than 7 per cent. of our total national effort to the building up of a strategic air offensive. And I believe I am correct in saying that the figure in the U.S.A. was not more than 10 per cent. What would 30 per cent. have produced, or even 15 per cent.? We cannot say.

In the second place, a great many of the advantages which the strategic air forces enjoyed late in the War, when they were exerting maximum pressure on the enemy, came from the occupation of bases made available by our armies and navies—for example in Italy. Moreover, the occupation of France and Belgium by our armies gave our bombers a great measure of freedom from enemy interference; it also allowed us forward positions for our radar and navigational aids on the ground. At the same time, the enemy was denied those same facilities—all by reason of the advance of our armies. I am sure that our naval members will not wish me to neglect to mention how much the maintenance of our air bases depended on sea communications. The factors are too intermixed for us to make any reasoned judgment on this hypothetical question. The question is therefore one which we cannot profitably pursue. Inevitably we are thrown back on the conclusion that so far as the lessons of this war go no one Service can of itself win a major war; all three must be involved.

Let me quote what was said by the United States Strategic Bombing Survey on this question of the achievements of the Combined Bomber Offensive in the last war. In their conclusion they state:—

“Allied air power was decisive in the war in Western Europe. Hindsight inevitably suggests that it might have been employed differently or better in some respects. Nevertheless it was decisive. In the air, its victory was complete . . . on land it helped turn the tide overwhelmingly in favour of Allied ground forces. Its power and superiority made possible the success of the invasion. It brought the economy which sustained the enemy's armed forces to virtual collapse, although the full effects of this collapse had not reached the enemy's front line when they were over-run by Allied forces.”

#### SOME LESSONS TO BE LEARNED

You will note that the report states that we might have employed our strategic air forces differently or better in some respects. That is an important pointer to us. Quite outside the question as to whether we were right in choosing certain target systems as our main objectives, or whether we ought to have attacked these systems at an earlier or different phase of the War, one of the outstanding lessons appears to be the need for a first-class comprehensive intelligence organization on which to base our strategic decisions in the future.

In the last war, a most important shortcoming of our intelligence system was in respect of economic, industrial and social intelligence of our enemy. We did not utilize to the full, certainly in the early stages, the wealth of specialist technical knowledge we had in the country. This is a matter which needs most careful and periodic review, in order to meet changing conditions of the future.



Another direction in which we suffered was in the scientific field. In the early and even the middle stages of the War, we lacked scientific advice, scientific guidance and scientific inspiration. Of the three Services, I think the R.A.F. was the first to recognize this weakness; and once we recognized it, we made rapid progress, and we benefited enormously; we benefited particularly from the establishment of Operational Research Sections in all the Commands, and we benefited from the close liaison between the Service and scientific and technical establishments.

I know that much has been done to integrate scientific effort and scientific personnel with the military machine. In the future, however, we must be absolutely certain that we have the scientific backing which our highly technical and scientific weapons and scientific methods demand; and above all, the Royal Air Force must be receptive to scientific thought and scientific progress.

Finally, if there is one outstanding lesson to be learned from the last war, I think it is that a strong and well-equipped strategic air force remains a primary need for the British Commonwealth of Nations. It is the essence of peace and of our future defence, and it is to the advantage of all our people, and to the Navy, Army and Air Force alike, that we should maintain this force at the highest possible standard of efficiency.

#### DISCUSSION

AIR CHIEF MARSHAL SIR ROBERT BROOKE-POPHAM: I gather from what the Lecturer said that it would have been better to have concentrated from the very beginning on the bombing of transport, petrol production and industrial targets, but what are his views on concentrating still further? It is possible that, if we had concentrated entirely on oil targets and had not sent any bombers to attack other targets, the effect on the German Air Force, due to the shortage of petrol for training and for operations, might have been worse than if we had devoted part of our effort to bombing their aircraft while they were in the process of being built.

To take the opposite point of view, we could consider transportation: it might be possible to argue that if we had concentrated entirely on petrol, leaving the canals and railways alone, even if we had stopped every single lorry from getting along the roads, the railways and canals could have replaced them.

THE LECTURER: Until we were established on the Continent it was impossible to concentrate on any particular target because the forces available were certainly not adequate to meet the needs of the various defensive commitments which arose from time to time. Then, after 1943, I should say that the primary need of the Royal Air Force and of the American Air Force was to support the assault on the Continent. Until we had established ourselves on the Continent, that was the first call on the strategic air forces, and as soon as that need had been met, the Combined Chiefs of Staff did give first priority to the bombing of oil production, and there was real concentration which made the attacks decisive.

AIR COMMODORE L. L. MACLEAN: It strikes me that in any war one has to get down to fundamental principles, and if not the most important, one of the most important of these is the economy of effort. The Lecturer dealt at length with the results achieved, but I do not think he gave a very clear indication of the amount expended in achieving those results, and it is only when you get a return for your expended energy that you can say you have made a profit.

I cannot give you a figure for the total cost of the bomber offensive, but one can work out an approximation backwards from the losses incurred. Bomber Command lost some 22,000 aeroplanes in the bomber offensive, and taking the average cost of each at £50,000, that works out at eleven hundred million pounds. They lost in killed air crews 79,281, and Harris in his *Bomber Offensive* gives the cost of training each member of an air crew

(it is the most expensive training in the world) as £10,000. Therefore the cost of air crews killed runs into very nearly eight hundred million pounds. If we assume that the cost is 10 per cent. of the total, we actually run into a figure of nearly twenty billion pounds, and that is apart from major overheads, and ignoring the cost of the parallel American offensive. It is worth while thinking of those figures, particularly in terms of the American Loan now.

It must also be borne in mind that the Lecturer did not deal with the bomber offensive prior to 1943. He dealt with it when we were in a position to bring an overwhelming weight to bear. As I understood it, the efficacy of air attack depended on the weight of bombs which you could lay down; in other words, it is no good going in for air attack unless you can bring an enormous weight of bombs to bear. Therefore, for aerial attack in the future we will have to maintain a great air force to carry it out and make it effective. Prices are going up in every conceivable way, and the question is whether this Country can afford to maintain anything approaching an air force which is going to be effective in war.

THE LECTURER: I do not know whether any reply is called for. The figure I gave was 7 per cent. of the national effort, which is little enough when we have regard to the result produced.

AIR COMMODORE MACLEAN: The actual figure given by Tedder as the overall cost of the War was some twenty-six thousand million pounds, but I am not sure whether that was the national effort or the total cost of war. However, if it is worked out on either basis from the figures which I gave, it will be seen that the figures of 7 and 12 per cent. quoted by the Lecturer as the percentage of the bomber effort are not accurate.

THE LECTURER: The magnitude of those figures are too large for me to comprehend immediately.

AIR COMMODORE MACLEAN: I agree, but we must try to comprehend. We launch quite easily into these astronomical figures, which are not hypothetical. They have been worked out on a practical basis.

AIR MARSHAL SIR RALPH COCHRANE: May I take it that 7 per cent. is an accurate figure? We have just listened to some alarming-sounding calculations, but I have always understood that 7 per cent. was the official figure of the bomber offensive; if that is so it seems to me that we ought to turn our eyes to the other 93 per cent. rather than to the 7 per cent.

THE LECTURER: I think that 7 per cent. is regarded as the official figure for the proportion of national effort expended on the bomber offensive.

CAPTAIN E. ALTHAM, R.N.: I think that one of the most important things which has emerged from the lecture is the importance of selecting targets. What are the most effective and paying targets for bombing? I think we got from the Lecturer that our primary targets—I do not know whether they were meant to be in order of priority or not—were the German Air Force industry, the transportation system, and oil production.

THE LECTURER: Might I say at once that priority of attack on those targets varied from time to time.

CAPTAIN E. ALTHAM, R.N.: What I was leading to was this: would we be right in thinking that the Germans adopted a different attitude towards the choice of targets, and that they put very high in the scale of priority the attack of living areas? We know now that attacks on living areas did not, in fact, pay a high dividend: they did not bring us to our knees, and the extensive destruction of German cities did not bring Germany to her knees, although it might have undermined morale. Therefore, in a future war, would we be wise to ignore living areas in favour of concentrating upon what we may call military targets?

That leads me to another question in connection with the use of air power in the offensive at sea, particularly against the U-boat. The U-boat of the next war will be even more of a problem than it was in the late war because it has developed greatly. The

Lecturer has referred to the effect of the war waged against U-boat bases, works and fuel supplies; but I suggest that it is vital to keep our eye on the ball, so to speak, and not to regard that form of anti-U-boat warfare as in any way a substitute for the offensive against the U-boat at sea, because, once the U-boat has got to sea, no amount of bombing of fuel supplies or building slips will provide direct protection for our convoys.<sup>1</sup>

Lastly, on the question as to what proportion of the nation's military offensive should be devoted to bombing, I do suggest that that has some bearing on the fruits of victory. We all know that by knocking each other about to the extent we did in the late war by bombing—and may do to a far greater extent in a future war—even the victorious nation is left with a liability in the form of the conquered nation, instead of anything in the nature of fruits of victory. Therefore, may it be that, in adopting a particular strategical policy in connection with bombing, we should consider what the final effect of it will be after a war.

BRIGADIER COWLEY: One of the most significant features of the bombing of the Ruhr was the fact that comparatively little damage was done to power stations, and many German industrialists and visiting allied industrialists have remarked how much harm would have been done to German industry had these power stations been knocked out. Knocking out one power station would put out of action many factories, and I should like the Lecturer to tell us whether they were ever high on the list of priority targets.

THE LECTURER: They were considered at various stages of the War, and I think the reason why they were not given high priority was largely because of the tactical factors involved. The vulnerable portions of a power station are small in compass, and although they were attacked from time to time, particularly in relation to Bomber Command operations, the attacks were never really successful.

<sup>1</sup> The following particulars show some of the destruction of U-boats caused by bombing raids on bases, dockyards, factories, etc.:—

(a) Total losses—

British raids ...	21 U-boats	} Total 63 = 8 per cent. of the total lost.
U.S. " ...	42 " "	

(b) The planned production of U-boats from January, 1944, to the end of the War was 563. Due, partly, to bombing raids, the actual production was only 308.

(c) The output of the new U-boats, types XXI and XXIII, was seriously affected. It is estimated that 27 completed craft of these types were destroyed in raids on shipyards.

(d) The raids also delayed or prevented output by causing damage to railways, telephone and telegraph services, power stations and factories; also by the destruction of pre-fabricated parts.

(e) The assembly of pre-fabricated parts was delayed or prevented by the bombing of supply lines, e.g. the Dortmund-Ems and Mittelland Canals. The mining of the Kaiser Wilhelm Canal also caused serious delays.

The following are the official figures (Cmd. 6843) for the destruction of German U-boats by the Allies at sea:—

	Causes.	U-boats destroyed.
Ships	...	246
Shore-based aircraft	...	246½
Ship-borne aircraft	...	44
Ships and shore-based aircraft	...	32
Ships and ship-borne aircraft	...	14
Submarines	...	21
Mines laid by aircraft	...	16
Mines laid by ships	...	16½
Other and unknown	...	82
		Total 718.



AIR VICE-MARSHAL E. B. ADDISON : In the light of the experience gained in the late war, does the Lecturer think that Bomber Command of the future should consist of a wholly night-bombing force, a day-bombing force, or a combination of the two ?

THE LECTURER : I would not venture to express an opinion on that. I think that the general conditions of future air warfare, particularly supersonic flight speeds involved and the new agents which would be employed are such unknown quantities, that he would be a bold man who made a decision which would lead us to train our bomb crews exclusively for day or night bombing. I should not like to make that decision because I do not think the factors are sufficiently known as yet.

#### THE CHAIRMAN

Before I thank Sir Norman Bottomley, perhaps I might be allowed to say one or two things myself, because I was very much concerned in the affairs which were the subject of the interesting discussion which has just taken place.

Air Chief Marshal Sir Robert Brooke-Popham asked whether we should not try in the future to concentrate upon one type of target instead of dispersing our efforts and changing from one target to another, and Captain Altham raised very much the same point in the first part of his remarks. I can tell you that right from the beginning when I came into it in 1940, I never swerved in my opinion that oil was the most important target. Both Lord Newall, who was Chief of the Air Staff, and I started at once to persuade the Defence Committee that oil was the best target. Indeed, the synthetic oil plants were then characterized by a most alluring name, that is, "self-destructing targets," the idea being that if you dropped a bomb anywhere around the target, the whole lot would go up in flames. Unfortunately the Germans thought about that too and they took precautions to prevent that sort of thing happening. The reasons why we could not bomb them very successfully were that we had not the resources with which to make sufficiently heavy attacks—neither the number of aircraft nor heavy enough bombs, and also because we had not the equipment at that time to enable us to bomb precisely. We had not the equipment which we had in 1945, and the pathfinder forces which enabled us to bomb vital targets with extraordinary precision, even at night or through dense cloud.

Choice of targets was conditioned by tactical considerations and largely by equipment which, at the later stages of the War, enabled us to achieve results which were absolutely impossible to achieve with the equipment which we possessed at the beginning of it.

Sir Norman Bottomley referred to the Casablanca Conference as being the beginning of the great air offensive, and it was, of course; the beginning of the great Anglo-American bomber offensive; but it had been conceived long before that. I think the first big decision was that which the Cabinet took in 1941 to build up a force of several thousand bombers, the decision being made in the light of our knowledge of the equipment which was only in the process of development at the time. We could foresee to a very large extent the enormous improvements in the striking power of Bomber Command which were possible, although, as the Lecturer has pointed out, they took a long time to effect, and it was not until well into 1944 that we and the Americans together had the front line strength which we had envisaged in 1941. When we got that strength it was decisive. It brought the German war machine to a standstill; it reduced the amount of oil production to 5 per cent. of all fuels.

I think it is true, as Captain Altham pointed out, that the results of the bombing have placed Germany in desperate straits and have rendered her a burden upon us, but if we had not adopted the offensive and thrown Germany on the defensive—if it had been the other way round and if Germany had been bombarding London and other centres of our war industries then I think we should have had to pay a good deal more than the cost of the Bomber Offensive as calculated by Air Commodore MacLean.

Although the results of a modern war are terrible and there are, as Captain Altham said, very few fruits of victory, the results of defeat are, as we can see, more frightful still.



The Lecturer refused, quite rightly, to pass an opinion as to what sort of air force we should have in future; but I think he will agree that the more precise methods we now have of navigation and striking the target make it more likely that targets in the future will be bombed with greater precision than they were until late in the last war—apart, of course, from the possible use of atomic bombs against big targets.

We have indeed listened to an admirable, clear, concise, lucid, objective and masterly summary of the achievements of the Anglo-American Bomber Commands during the War. I am sure we all feel that the lecture which Sir Norman Bottomley has delivered will contribute to the shaping and moulding of thought on these subjects, and the material which he has put before us will indeed be the raw material of the great decisions which will have to be taken in the future concerning the Air Force and Bomber Command.

I feel privileged to have been present to hear this lecture delivered, and I am certain that I shall be expressing your feelings as well as my own when I say thank you to Sir Norman Bottomley for the lecture which he has given us this afternoon. (*Applause.*)

The vote of thanks to the Chairman, proposed by Marshal of the Royal Air Force Lord Newall, was carried with acclamation.

## GERMAN U-BOAT DESIGN AND PRODUCTION<sup>1</sup>

By CONSTRUCTOR-COMMANDER J. F. STARKS, R.C.N.C.

**T**HE story of the development of Germany's U-boat force is a clear example of a major maritime Power devoting at first the main part, and later practically its entire naval effort to one class of warship, designed to operate chiefly against merchant shipping.

Comparison between British and Allied submarine design and production and that of the German U-boats is inevitable. It is difficult, if not impossible, to present a fair tabular comparison between designs of various countries, but it is thought not inappropriate to refer to this question.

In the first place it should be stated that there has been, and still is, a tendency in many quarters to associate the submarine with the German nation, not an unnatural association in view of the severe effects of German submarine warfare on British ships and communications. This has often led to the conclusion that, if a submarine or piece of submarine equipment be German, then it is of necessity of the highest quality in all respects. This view, it is suggested, has been over emphasized.

It is important to appreciate that the design of a submarine and any innovations introduced are influenced, as is any engineering project, by the work it has to do and, in the case of a warship, the opposition it may have to encounter. If all goes well with a design it is not changed merely for the sake of change, particularly in war.

Regarding comparison with British submarines in particular, it is worthy of note that Great Britain has been in the past most definitely an anti-submarine nation, while Germany has been a pro-submarine nation. This fact alone is enough to show the virtual impossibility of anything but a broad comparison between German submarines and those of British design. If the Germans outshone the British and Allied designs it was rather in the implementing of new developments than in their conception. In fact, on reviewing the German submarine trend, it is surprising to see how parallel were the lines of thought of the Allies and the Germans, but in view of the enormous effort the latter allocated to submarines they were able to introduce the alterations into their U-boats much more quickly. Moreover, the opposition, targets and theatres of operation for the Allies were so very different from those of the Germans. The latter's main effort was in the Atlantic, with comparatively close bases. The theatres for the Allies' submarines were chiefly the Mediterranean and the Far East at very great distance from their bases.

Apart from the developments dictated by war lessons, the amount of effort devoted to the submarine design in different countries is, of course, most important. If further evidence is required of the magnitude of the German submarine effort from that already demonstrated by the Battle of the Atlantic, it is hoped that the data given in this paper will provide it.

Although the numbers of submarines employed and the strength of Allied forces must of necessity affect the outcome, it is a tribute to the early war-time designs of

---

<sup>1</sup> The full Paper (of which this is an abbreviated version) was read before the Institution of Naval Architects during their Spring Meeting, 1948.

U-boats that they withstood for so long the full onslaught of the Allied anti-submarine forces. Their toughness was shown on numerous occasions, and the U-boats, for the second time in history, nearly won.

It is suggested that a fair summarized conclusion of German U-boat design is :—

(a) The submarines actually employed on operations had by no means outmoded those of the Allies. Each country had submarines capable of fulfilling the duties required of them.

(b) The modifications made to the war-time U-boats, in particular the *sch snorkel*, were in the main *defensive* in character. They were not outstanding inventions; they employed well-known submarine principles and the new devices were fitted because the theatres of operations and efforts of the Allied anti-submarine units forced the Germans to do so.

(c) At the cessation of hostilities the Germans had submarines almost available and designs projected that were to set a new fashion in submarine warfare. These new types of submarine were the best illustration of the tremendous efforts given to U-boat development and had they arrived on operations they would have been no small "headache" for the Allies. Had they come earlier they might have prolonged the War.

(d) Lastly the Type VII C U-boat, which comprised some 50 per cent. of the German submarine fleet, was "a very good submarine of a conventional type."

#### STAGES IN DEVELOPMENT

##### *Stage I. The Submersible or Conventional Submarine*

The Germans did not officially begin designing their own U-boats until the early 1930's, but prior to this they had by no means ignored the question of submarine design. They had their interests and experts in several submarine design and building projects in a number of countries outside Germany and in 1931, approximately, were able to commence the build-up of a U-boat service with a nucleus of well-experienced design staff. There is no doubt, too, that their factories and shipyards had taken a keen interest in production of submarines and auxiliaries.

The trend of design from Type I to Type IX was steady and consistent. The early designs were not very different in principle from those that operated towards the close of the 1914-18 War, i.e., with moderate surface speed and endurance and the usual 1-hour endurance at a full submerged speed of approximately 9 knots. The submarine was intended to patrol, dived by day and surfaced by night.

As their designs and national ambitions developed, so the surface endurance increased. Similarly the conception of the method of closing and attacking convoys *on the surface* by night led to the demand and supply of increased surface speed. This trend culminated in the Type IX D2 where a surface endurance of 30,000 miles at 10 knots and a top surface speed of 19.2 knots was achieved.

It is of interest, and most important in comparing U-boats with submarines of other navies, to note that the high surface endurance and surface speed were achieved primarily by :—

(i) Stowing oil fuel in main tanks, thus reducing the reserve of buoyancy and sea-keeping qualities of the ships on the surface.

(ii) Adopting the practice of allowing the engines to be overloaded for short periods to get the maximum surface speed. This feature, which would of course be adopted by any ship in an emergency, came to be an accepted practice with the German U-boat.

(iii) Keeping accommodation requirements to the bare minimum.

The two most typical examples of the early efforts up to 1943 were the Types VII C and IX D2. These designs were, of course, subject to variations, in particular the gun armament was increased as war experience was gained. This latter is best shown by reference to the stages in bridge design for the Type VII C. As an example of this stage, remarks on the Type VII C's main features are given at the end of this section.

Before proceeding to the next stage in development, mention must be made of the various incidental problems which inevitably arise in wartime, such as minelaying submarines, supply submarines, cargo-carrying submarines, etc. The types produced are given elsewhere in this paper and it is sufficient to say at this stage that, in general, the Germans adopted the procedure, as have most countries, of adapting an existing design for such special purposes. Requirements such as minelaying and supply submarines are usually, though not always, a passing phase dictated by special operational needs, and the policy of using a parent design for such ships is considered sound.

It would have been wise to investigate a completely new design only if large numbers had been required.

## Stage II. The Schnorkel

The next stage in development was the fitting of the *schnorkel*.

Much has been published of this so-called German invention. The circumstances bringing about its introduction were that the Germans had achieved finality in the design of the submersible. The latter was now fast, tough, well armed, and had wide range, but it had to surface at regular intervals to charge its batteries and air reservoirs.

The U-boats had extended their scenes of operations over most of the World and had achieved appreciable success. The main effort was, of course, confined to the Battle of the Atlantic, and by 1942-43 the Allied anti-submarine forces, in particular radar-fitted aircraft, were beginning to take a heavy toll of the U-boats. Too many, from the German viewpoint, were being caught on the surface, even by night. This led to the requirement that the submarine should not surface and hence some means had to be provided to enable the Diesel machinery to be run while dived, viz., the *schnorkel*.

As is well known, this comprised a mast leading to the surface through which air could be drawn both for the engines and the air compressors and also through which the engines could exhaust. More details of it are given later.

It can be fairly said that this device was not a purely German invention. Prior to the War most countries possessing submarines had investigated such a scheme, in particular the Dutch. Both Britain and Germany began serious development of this project in 1940 but both discarded it *pro tem* as the need for its introduction had not become vital. Need for further development during the War did not arise for the Allies, but for the Germans it most certainly did. Thus it was that, in 1943, action was taken to fit all existing U-boats with the *schnorkel*. All later boats were also to be fitted.



There are many problems associated with *schmorkelling* submarines, not the least being physiological, but the Germans achieved a good measure of success, some of their U-boats staying at sea for several weeks without surfacing.

### Stage III. Need for High Submerged Speed

While the *schmorkel* had, to some extent, countered the Allied anti-submarine effort, the U-boats were by no means free of tribulations, and the Germans wisely regarded the *schmorkel* as purely a stop-gap. By fitting it they had changed their U-boat fleet from a very mobile force into a much more static one, the top speed using the *schmorkel* being of the order of 6 knots. The U-boats could, of course, operate more closely to enemy coasts with less fear of detection than hitherto, but their movement in the wide areas of the Atlantic was severely restricted, as was their ability to make contact with the enemy. Moreover, at this stage of the War, having carried out an attack it was not possible to surface at night and escape at high speed without being detected and attacked by aircraft and/or surface escorts.

Later, in 1943, therefore, came the conception of a *schmorkel*-fitted, high submerged speed submarine, submerged propulsion being by batteries and motors. This stage is illustrated by the Types XXI and XXIII, the former being the ocean-going type and the latter for coastal work.

The submarines were designed for continuous submerged patrol. Surface-keeping qualities and main gun armament were surrendered and the hulls streamlined to the greatest possible extent to reduce submerged resistance.

The Type XXI is described at the end of this section as a typical example of this stage.

At this juncture also, the effect of Allied bombing was being felt and this, in conjunction with the need to get this new type into production as soon as possible in large numbers, led to the adoption of the prefabricated scheme, described later.

### Stage IV. Approach to the True Submarine

The Germans fully realized that although large battery capacity combined with streamlining provided a higher submerged speed, the weakness of this type lay in the fact that the top speed could only be maintained for a short time. Moreover, the situation demanded even higher submerged speed. In parallel with the Type XXI, therefore, work was carried out to produce a propulsion unit which would operate with the submarine completely divorced from the atmosphere. Such a unit required large quantities of stored oxygen or an efficient oxygen carrier.

A large number of investigations were conducted, but the only unit which came into production was a turbine plant which used hydrogen peroxide as the method of storing oxygen. This unit gave higher speeds and greater time endurance at high speed than the battery-driven submarine but at the expense of heavy fuel consumption, reduced radius of action at the cruising speeds, and less flexibility.

No such submarine operated in the War, but it was intended that any operating would still be fitted with the *schmorkel*.

The Types XVII and XVIII were classes of submarine of this stage and were the nearest approach to the ultimate aim of the submarine designer, viz., the true submarine, i.e., one which will operate for a whole patrol completely divorced from the air.

The following is a summary of the four stages of development :—

#### DESIGN PARTICULARS OF THE FOUR STAGES

Summary of design features	Stage I High surface speed, long range of operation		Stage II Fitting of <i>sch snorkel</i> to existing types. The U-boats had lost the effect of their high surfaced speed and endurance	Stage III Surface qualities subordinated to those submerged. <i>Schnorkel</i> included in original design		Stage IV Increased submerged full speed and endurance. <i>Schnorkel</i> included in design
	VII C	IX D2		XXI	XXIII	XVII B
Displacement—						
Surfaced ...	769	1,616	Maximum submerged speed while using the <i>sch snorkel</i> was of the order of 6 knots	1,621	232	312
Submerged ...	871	1,804		1,819	256	337
Speed—						
Surfaced ...	17.3	19.2		15.6	9.7	8.5
Submerged ...	7.6	6.9		15-16	10	25*
Endurance—						
Surfaced ...	9,700 miles at 10 knots	32,300 miles at 10 knots		15,500 miles at 10 knots	1,350 miles at 9.7 knots	3,000 miles at 8 knots
Submerged ...	80 miles at 4 knots	57 miles at 4 knots		365 miles at 5 knots	175 miles at 4 knots	40 miles at 4.5 knots (on batteries)

\* German estimate of speed with two turbines fitted.

#### TYPE VII C AND VII C (4I)

A diagram of the layout is given in Fig. 1.

The Type VII C was designed along conventional lines, being the usual saddle tank submarine, armed with torpedoes (and/or mines) and gun, fitted with two periscopes, direct Diesel drive on the surface, main motors for submerged propulsion with two battery sections. As has been stated, the *sch snorkel* was fitted to this class during the course of the War. Some of its main features were :—

**Hull.**—The pressure hull, except for the closing plate over main machinery, was all welded and circular sectioned throughout. The plating was of a carbon content steel of approximately 0.21 per cent. and  $\frac{7}{8}$  in. thickness amidships, decreasing somewhat towards the end of the vessel.

The frames, welded internally approximately 23 in. apart, were of a bulbous "T"-shape section toe welded to the hull.

The dome bulkheads at the ends of the hull were steel castings.

External tanks were also all welded.

**Main Tanks.**—The position of the tanks was, as shown in Fig. 1, the most striking feature being the internal No. 3 main tank. It is considered that this internal main tank, with its very large hand-operated kingston flaps, was an undesirable arrangement and detracted somewhat from the integrity of an otherwise very tough hull.

Main vents were hand-operated from the control room. There appears a very real risk of the shafting led fore and aft to the end main tanks being distorted under depth-charge attack.

Main tanks were blown by using H.P. air to bring the submarine awash and the blowing completed by using the exhaust from the main Diesel machinery.

**Speed.**—The VII C U-boat had a full speed of 17.7 knots in the surface condition without fuel in the main tanks, the continuous full speed being 17.3 knots.

Submerged full speed was 7.6 knots, and this could be maintained for one hour.

**Armament.** (i) *Torpedo.*—There were four internal torpedo-tubes forward and six reload torpedoes. Aft there was a single internal torpedo-tube, with one reload.

Two torpedoes were also carried in containers external to the hull. To get these into a torpedo-tube meant the crew going out on the superstructure and opening a torpedo hatch at sea—both most undesirable features.

(ii) *Mines.*—Mines capable of being discharged from the torpedo-tubes, could also be carried in lieu of part or whole of the torpedo armament.

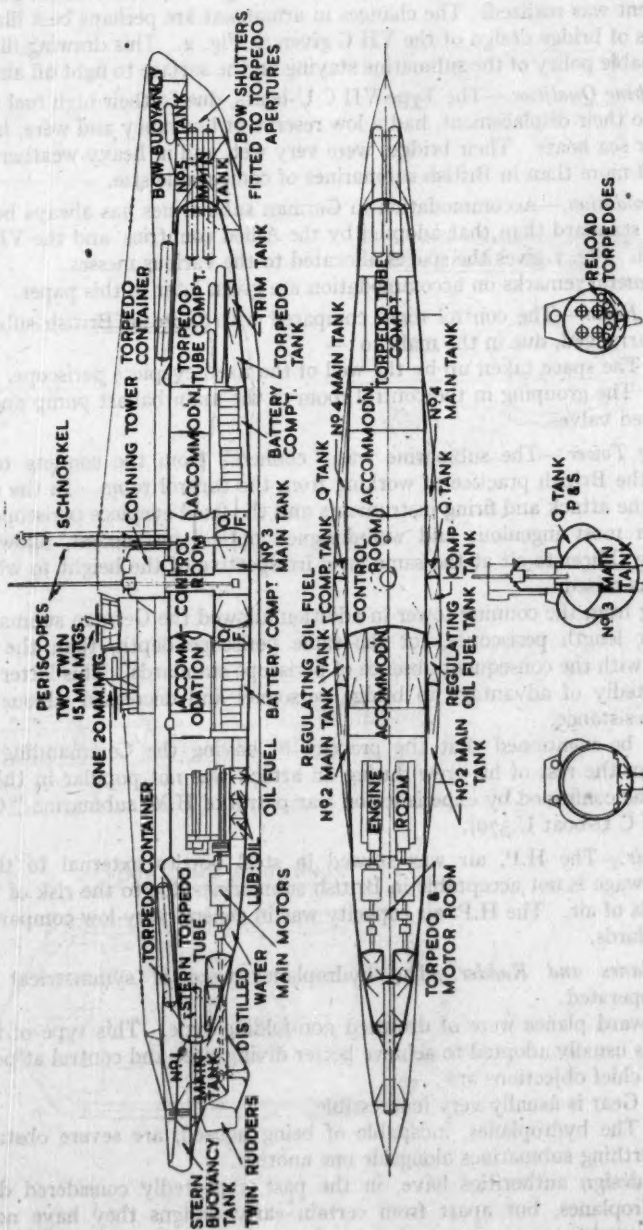


Fig. 1.—Type VII C. U-boat

(iii) *Gun Armament*.—Initially the Type VII C was armed with one 8.8-cm. gun and one 20-mm. gun on the bridge, but it was not long before the need for additional gun armament was realized. The changes in armament are perhaps best illustrated in the stages of bridge design of the VII C given in Fig. 2. This drawing illustrates the questionable policy of the submarine staying on the surface to fight off air attack.

*Sea-keeping Qualities*.—The Type VII C U-boats, due to their high fuel stowage in relation to their displacement, had a low reserve of buoyancy and were, in consequence, poor sea boats. Their bridges were very wet, and in heavy weather surface speed fell off more than in British submarines of comparable size.

*Accommodation*.—Accommodation in German submarines has always been of a much lower standard than that adopted by the Allied countries, and the VII C was no exception. Fig. 1 gives the spaces allocated to the various messes.

More general remarks on accommodation are given later in this paper.

*Control Room*.—The control room compared with those of British submarines was poorly arranged, due in the main to :—

- (i) The space taken up by the well of the fixed eyepiece periscope.
- (ii) The grouping in the control room of the main ballast pump and all its associated valves.

*Conning Tower*.—The submarine was "conned" from the conning tower as opposed to the British practice of working from the control room. In the conning tower were the attack and firing instruments and the fixed eyepiece periscope. This latter was a most ingenious and well-designed optical instrument, allowing the Commanding Officer to sit at the same level irrespective of the height to which the periscope was raised.

Conning from the conning tower in addition allowed the German submarines to have shorter length periscopes, for the same periscope depth, than the British submarines, with the consequent absence of periscope standards. This latter feature was undoubtedly of advantage to bridge personnel and decreased silhouette and submerged resistance.

It may be mentioned that the practice of having the Commanding Officer divorced from the rest of his crew during an attack was not popular in the Royal Navy and was confirmed by experience on war patrol of H.M. submarine "Graph" (ex-type VII C U-boat U.570).

*H.P. Air*.—The H.P. air was stowed in steel bottles external to the hull. External stowage is not acceptable in British submarines due to the risk of tell-tale leaks and loss of air. The H.P. air capacity was in general very low compared with British standards.

*Hydroplanes and Rudder*.—The hydroplanes were of symmetrical section electrically operated.

The forward planes were of drowned non-folding type. This type of forward hydroplane is usually adopted to achieve better diving time and control at periscope depth. The chief objections are :—

- (i) Gear is usually very inaccessible.
- (ii) The hydroplanes, incapable of being housed, are severe obstructions when berthing submarines alongside one another.

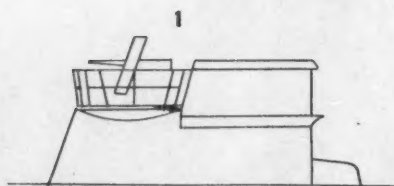
British design authorities have, in the past, repeatedly considered drowned forward hydroplanes, but apart from certain early designs they have not been generally adopted.

It is understood that the Germans would have preferred to change to the British

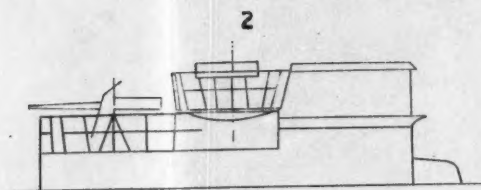
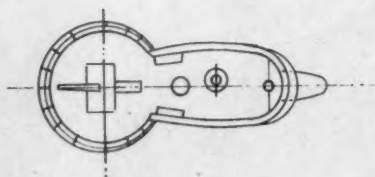


a  
l  
s  
.  
e  
-  
e  
a  
s  
es  
ts  
as  
ng  
his  
he  
he  
to  
sh  
are  
nd  
cer  
yal  
h"  
ull.  
ale  
with  
ion  
ard  
ope  
ions  
ned  
een  
tish

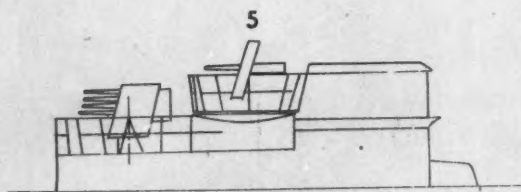
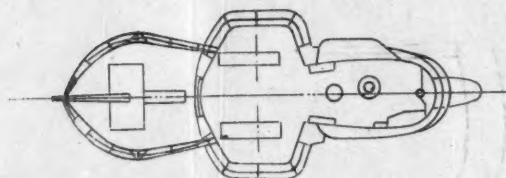
L



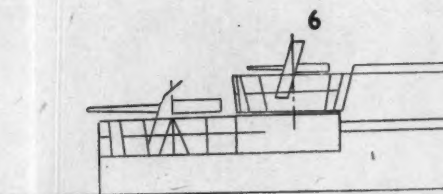
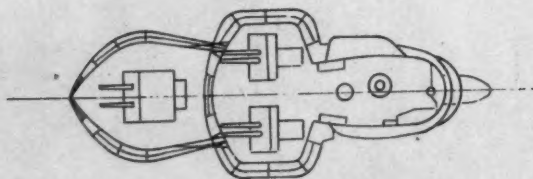
ONE 15MM. MOUNTING



TWO 15 MM. & ONE 20MM. MOUNTING



TWO TWIN & ONE QUADRUPE 20 MM. MOUNTING



TWO 37 MM. & TWO TWIN 20MM

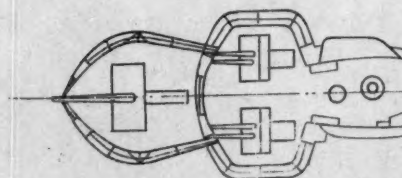
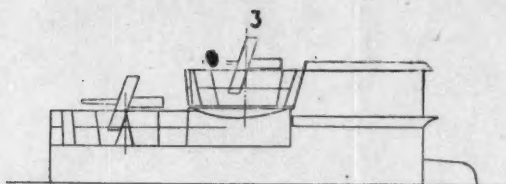
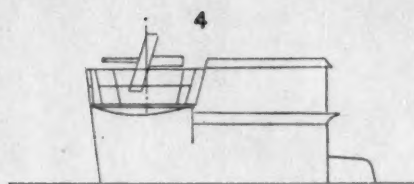
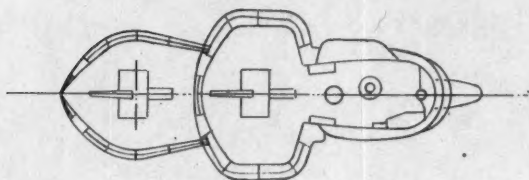


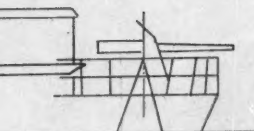
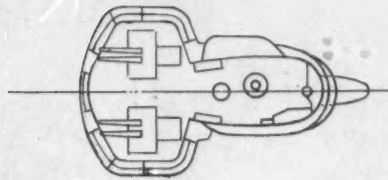
FIG. 2.—DEVELOPMENT IN GUN ARMAMENT FOR



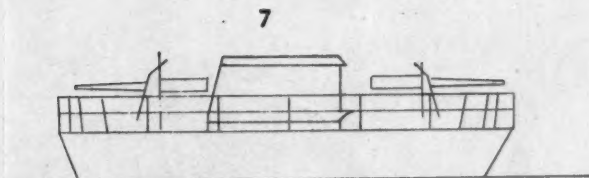
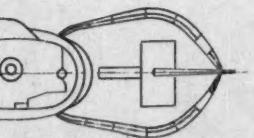
TWO 20 MM. MOUNTINGS



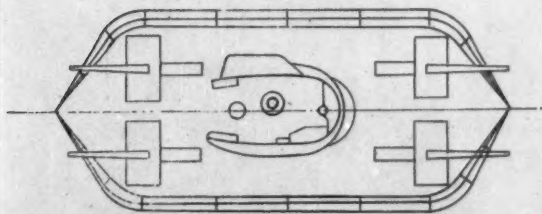
TWO TWIN 20 MM. MOUNTINGS  
ONE 37 MM. FORWARD



OMM. MOUNTINGS



FOUR 37 MM. MOUNTINGS







practice of superstructure folding forward hydroplanes much earlier than they did, but did not do so to avoid delays in construction.

Twin rudders were fitted to the Type VII C, not, it is believed, on account of a desire for special turning but to accommodate the stern torpedo-tube which discharged its torpedo between the rudders.

*Ventilation.*—The ventilation of the batteries in the Type VII C and, in fact, all German U-boats, was of interest in that the method adopted and continued was one which British experience has shown to be most unsatisfactory, and in some cases dangerous.

The Germans used the individual cell ventilation, i.e., air is sucked through each cell individually and the piping from each cell led to a common main. This main trunking and associated fans were also used for ship's ventilation, and when batteries were on top of the charge, and gassing freely, a relatively high percentage of hydrogen was present in the trunking.

The British practice has been, for several years, to fit the tank type of ventilation, i.e., air is drawn from the battery compartment as a whole with consequently a much lower hydrogen percentage in the trunking.

There was not much margin of safety from explosion in the German method as both they and ourselves, when using German submarines, have had forcibly demonstrated by comparatively frequent battery explosions.

*Air Conditioning.*—No air conditioning was fitted to the Type VII C, or in fact to any boats before the Type XXI, but most vessels were equipped with cartridges of caustic potash which could be inserted in the ventilation trunking to absorb carbon dioxide.

*Hatches.*—Hatches were of the spider clip type—a design very much inferior to British practice and one which was abandoned by us for the whole of our war-time submarines. These hatches had a marked tendency to lift under depth-charge attack and yet were perpetuated in most German designs.

#### TYPE XXI U-BOAT

A diagram of the layout is given in Fig. 3.

The Type XXI was designed to operate continuously submerged, the hull being streamlined as far as practicable, large battery capacity and a *schnorkel* being fitted. A small motor to ensure silence at low speeds was fitted to drive one shaft. The Type XXIII was the coastal counterpart to the ocean-going Type XXI.

Dealing with the Type XXI's main features:—

*Hull.*—The most striking feature of the pressure hull was its shape. It was of figure-eight section amidships, as illustrated in the diagram. The departure from the conventional circular section, which had been consistently maintained in all previous designs, was to obtain the most economical stowage of the large battery capacity.

It will be seen that the battery sections were arranged two-tier fashion, one compartment over another.

As described elsewhere, the hull was built in eight sections and when welded together there was no means of getting certain large items of equipment out of the boat without cutting the submarine in two, or cutting out a prohibitive amount of plating and moving other machinery.

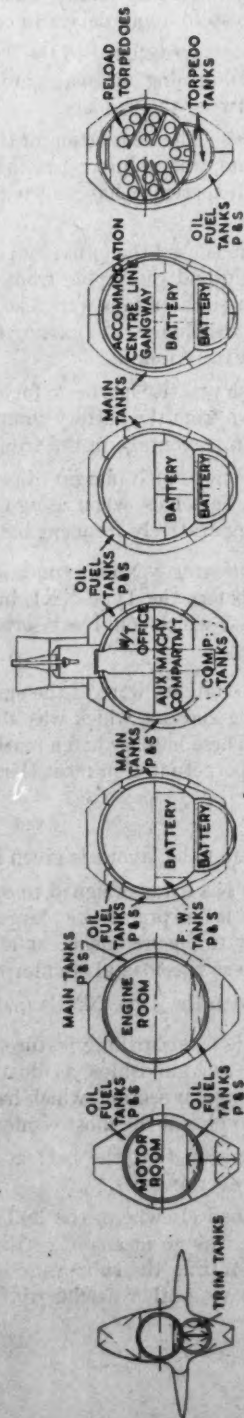
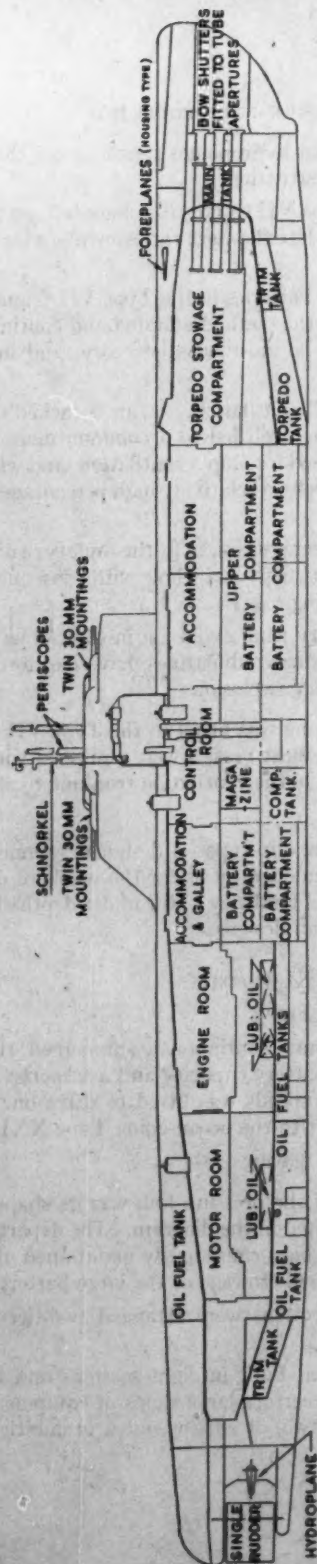


FIG. 3.—TYPE XXI U-BOAT

The hull was of similar steel to that used for the Type VII C and was welded throughout, except where steel castings were fitted, which were riveted.

The frames were welded *externally* over the top part of the section throughout the greater part of the length. This was to simplify prefabrication and to obtain clear runs of cable, piping, etc. At the same time it certainly facilitated accommodation of equipment inside the pressure hull.

The forward dome bulkhead and part of the torpedo-tubes consisted of a complete casting. The after bulkhead was flat as opposed to the usual dome shape.

*Speed.*—The surface speed was of the order of 15½ knots. The whole object, however, was to obtain maximum submerged speed, and all other requirements were subordinated to this requirement.

The submerged speed was claimed by the Germans to be 16 knots, but there is reason to believe that the top speed for one hour's endurance would have been much nearer 15 knots.

*Diving Depth.*—The hull plating over the largest section was approximately 1½ in. thick and a practical diving depth of 500 ft. is considered a reasonable figure.

*Armament.*—There were six bow torpedo-tubes with the impressive reload capacity of a further 17 torpedoes. No stern tubes were fitted.

The torpedo stowage compartment, because of the large middle section of the submarine, was of "cathedral-like" dimensions and contained elaborate arrangements for loading and stowing torpedoes.

*Gun Armament.*—No large gun was fitted as it would give rise to undue submerged resistance.

A concession to the gun-minded authorities led to the fitting of two machine-gun mountings on the bridge. These were well protected against small arms fire from aircraft or surface ships.

*Schnorkel.*—A periscopic *schnorkel* mast was fitted. This mast was very slow in raising and lowering and in this and other respects was not entirely satisfactory.

*Sea-keeping Qualities.*—As this class was designed for operation submerged, sea-keeping qualities were sacrificed to submerged qualities. As a result the bridge was almost untenable in heavy weather, and British experience with these ships was that it was necessary to batten down and run on the surface with the *schnorkel* mast up.

Bow and stern buoyancy tanks were fitted, however, but did little to mitigate these conditions.

*Accommodation.*—Accommodation was again of much lower standard than in British submarines. The centre-line gangway necessitated the messes being disposed on each side of the ship.

There were only three W.C.s and three washbasins for the entire crew.

*H.P. Air.*—The Type XXI saw the fitting of H.P. air operation to main vents, torpedo-loading winch, *schnorkel* mast-raising gear, and the capstan.

The H.P. air capacity was even further reduced over that in previous designs on the basis that the boats would rarely surface.

*Hydroplanes and Rudder.*—The hydroplanes and steering gear were telemotor

operated—the first time the Germans had adopted this method, presumably with a view to keeping noise to a minimum.

A feature which cannot be recommended was that the entire telemotor units were external to the hull. There is real danger of oil track and of ingress of sea water into the telemotor system.

The forward hydroplanes were rigged from the superstructure, as opposed to drowned hydroplanes in earlier types.

A single rudder was fitted.

*Telemotor System.*—The Type XXI had the most ambitious telemotor system of any German U-boat. It was designed to operate the hydroplanes, steering gear, periscopes and bow caps, using two pumps worked in conjunction with a ramless air-loaded accumulator.

This system gave repeated trouble, probably due to inferior workmanship, and teething troubles generally, and was one of the main causes of no Type XXI being ready for patrol when the War ended.

In contrast British submarines rely to a much greater extent on the telemotor system and it has proved generally very reliable.

*Ventilation.*—Battery ventilation was again of the individual cell type. Hydrogen disposal units were originally fitted but were not satisfactory and were removed.

*Air Conditioning.*—For the first time the Germans fitted air conditioning proper to a submarine in the Type XXI. It was possible to cool, dry and heat the air as required. It is certain that with the wide range of theatres of operation in all climates some of the earlier boats had been forced to surface to clear the air and were subjected to attack while doing so.

#### TYPE XVII AND XVII B U-BOATS

The special feature of the Type XVII was its turbine machinery, permitting submerged operation without contact with the atmosphere.

The main features of the Type XVII B were :—

*Hull.*—The hull was of circular section with underslung tanks, giving a diving depth of 330 feet. The displacement was 312 tons surfaced.

*Speed.*—Surface speed was estimated at approximately 8 knots.

The submerged speed using the turbine was never, as far as can be ascertained, accurately measured. The Germans claimed a top submerged speed of 25 knots, with two turbine units. It is believed that in actual fact only one turbine was finally fitted so the speed must have been appreciably less than 25 knots.

*Armament.*—Two bow torpedo-tubes with two reloads.

*Schnorkel.*—A periscopic *schnorkel* was fitted.

*Accommodation.*—The standard of accommodation was very low indeed and the submarine could have been used only for a very brief patrol.

There was little else to comment on in the Type XVII B and although fitted with torpedo-tubes it is most probable that this class was designed chiefly as a forerunner of larger turbine fitted submarines. The first four models (Type XVII) were, in fact, purely experimental submarines.

#### PRODUCTION

A type number was given to each design that was given serious consideration. There were in addition many other designs which did not progress to the stage of being given a type number.



It is a good illustration of the effort devoted to submarines that the Germans, from the early 1930's onwards, investigated and produced designs for some thirty classes of submarine with as many as four to six different variations of approximately ten of these types. These figures do not include certain classes of midget submarines produced towards the end of the War, nor can these statistics give any idea of the range and variety of separate investigations progressed. Not all the types were actually built, but of the thirty or more, some twelve parent types, with variations of some, reached the building stage.

As a further example of their exploration of submarine design, details have been obtained of what can at present be described only as a dream—a submarine which could fly! A preliminary investigation of this project, which, as far as is known, did not progress beyond the drawing board, although it is reported to have excited keen interest in high places, led to the not unexpected conclusion that it would not fly. With drastic modifications it could probably have been made to fly but would then have become almost a normal flying boat and would have been unable to submerge (voluntarily).

In all, some 1,100 U-boats were completed during the War, excluding midget submarines and the numerous hulls that were ruthlessly scrapped as another type was developed. The numbers of the various types built were:—

Type	Numbers built	
	Before the War	During the War
IA ... ..	2	0
II A ... ..	6	0
II B ... ..	18	2
II C ... ..	6	2
II D ... ..	0	16
VII ... ..	10	0
VII B ... ..	8	16
VII C ... ..	0	572
VII C (41) ... ..	0	87
VII D ... ..	0	6
VII F ... ..	0	4
IX ... ..	7	1
IX B ... ..	0	14
IX C ... ..	0	54
IX C (40) ... ..	0	87
IX D <sub>1</sub> ... ..	0	2
IX D <sub>2</sub> ... ..	0	29
XB ... ..	0	8
XIV ... ..	0	10
XVII ... ..	0	4
XVII B ... ..	0	3
XXI ... ..	0	120
XXIII ... ..	0	61
	<hr/> 57	<hr/> 1,098

Total = 1,155

These figures are most striking when one realizes the amount of equipment and

detailed design in a submarine, and are impressive even though it was the country's main naval effort.

Prior to 1943 production of U-boats was on more or less conventional lines as in Allied countries. Some sixteen firms were engaged on construction and they were controlled by the German Admiralty, the latter preparing the basic designs.

The time to produce a Type VII C or Type IX U-boat was some 7 to 9 months from laying down—not an over-impressive performance when compared with some of the efforts in this Country and taking all factors into consideration.

#### *Prefabrication*

In 1943, as previously stated, the Germans had two problems :—

(i) To counter the A/S forces by adopting a submarine design which could operate submerged for the whole of its patrol and possess reasonably high speed, viz. Types XXI and XXIII.

(ii) To introduce these new submarines into operational theatres at the earliest possible moment—no small problem with Allied air raids getting more and more frequent.

The idea of prefabrication on a national basis was conceived, and was received with much opposition in some quarters, particularly by the Main Shipbuilding Committee. Despite this opposition it was decided to adopt the scheme for the Type XXI and XXIII and any subsequent types. Because of the mixed reception, the whole programme was placed under the control of the Speer Ministry of War Production.

The advantages claimed for the prefabrication scheme were :—

- (a) Dispersal of the sections ; desirable in view of Allied bombing.
- (b) A larger labour force could be employed.
- (c) Increased production by employment of firms on repetition work.
- (d) Firms not necessarily shipbuilders could be employed.

A Central Design Agency was set up under the leadership of a German Naval Constructor. This Agency produced the detailed designs of the Type XXI and XXIII, specially allowing for sectional construction and produced detailed drawings, specifications, material orders, etc., based on preliminary guidance drawings provided by the Admiralty.

Despite the overall control of the Speer Ministry the latter's only real function was to ensure the necessary priority of supply of labour and materials.

As applied to Type XXI, the idea was to complete the eight sections entirely with machinery, fittings, pipe and cable leads, etc., all rigged before the sections were brought together ; the hull then welded, pipes connected, etc., and the submarine brought to a state ready for launch.

#### *Building Yards*

Three types of building yards were engaged :—

The first did the hull work proper, i.e. built the sections of pressure and external hulls, bulkheads, and certain hull fittings. These firms received the plating and frames already cut and set to shape by the steelmakers. Both shipyards and structural engineering firms—some 32 in all—were engaged in this type of work.

The second stage was for the hull sections to be transported to other firms—some 16 in number—where all wiring, piping, main and auxiliary machinery were

installed. Batteries were not installed until just before completion of the whole submarine.

The third stage was for three building yards to assemble the completed sections, which were welded together, on the building slips, carry out all final tests and deliver the submarines to the German Admiralty.

The overriding rules were :—

To carry out as much work as possible before the third stage was reached, thus leaving a minimum of work to be done in the final shipyard and keeping the time on the slipway as short as possible. As an example, it was attempted to get bearings for main shafts machined and aligned in the sections before assembly, but this was found impracticable and abandoned.

No modifications were allowed to interfere with the flow of completed sections. This necessitated the closest supervision and even then was not always fully achieved despite an army of inspectors and a multiplicity of instruction sheets and directions.

#### *Transport of Sections*

While some of the hull section yards were not immediately adjacent to waterways, the choice of the various firms was influenced by proximity to canals and rivers. Thus transport was for the most part made by water, special barges and pontoons being made to suit the various sections.

#### RESULTS OF PREFABRICATION

Because no Type XXI U-boat carried out a war patrol it may be argued that the prefabrication scheme was a failure. In this connection it must be appreciated :—

(i) The stress of war necessitated embarking on dispersed mass production without building a prototype and without completing the organization before starting work.

(ii) A large number of the workmen engaged had no experience with submarine work and did not appreciate the high standard of workmanship required. Inaccurate finish led to delay and compromise at the assembly yards. Sections did not always fit and some "pushing and pulling" was often necessary.

(iii) The ambitious target dates set to each stage of the work and the natural urge of the yards to complete accordingly led to a certain falling off of standard, but despite this the yards outstripped the design agency in some cases. As a result such equipment as the telemotor system was never satisfactory, and some of the early hull sections left the second stage yards uncompleted.

(iv) The effect of Allied bombing was felt in varying stages throughout the programme.

Despite these factors the first Type XXI U-boat was completed in approximately one year, and within 18 months of receipt of the guidance plans some eighty ships had been delivered and 120 within two years. One assembly yard was, at one stage, producing eleven submarines per month. This can only be described, bearing all things in mind, as a magnificent effort.

It is suggested that a fair conclusion is that the prefabricated scheme for submarines to the extent adopted by the Germans is practicable and desirable provided that :—

- (a) All design details are settled before beginning mass production.
- (b) Numbers required are large.
- (c) Transport means are available.

All of which were fulfilled in the case of the Type XXI and XXIII, except for (a). It was, of course, intended that condition (a) should be realized, but it was, perhaps inevitably, found impossible to achieve.

In 1941 when the U.570 was captured intact, there was little evidence in this submarine to indicate that the Germans were short of material.

The surrendered U-boats examined in 1945, however, were very different. Non-ferrous metals had been almost entirely eliminated and apart from the rather austere appearance inside the submarines, the amount of maintenance to keep valves, etc., operable due to steel surfaces rusting and the like was very formidable.

#### MIDGET SUBMARINES

In addition to the types mentioned above the Germans devoted no small effort to midget submarine projects. Their interest in this type of weapon was given impetus by the success of the British X craft attack on the "Tirpitz." These designs were, in some cases, given type numbers as well as code names. In view of the number of projects investigated, reference is made only to those produced in any quantity.

*The Biber.*—This was a one-man submarine armed with two torpedoes and having a displacement of  $6\frac{1}{2}$  tons. It was fitted with a petrol engine—very clearly an undesirable feature.

The craft is claimed to have achieved a speed of approximately  $6\frac{1}{2}$  knots. There were no compensating tanks as such, it being necessary for the operator to adjust the water in the diving tanks for ballast corrections.

The fact that the crew was one man only was found to be a great disadvantage. This was also true of the *Molch*. The principal features of the *Biber* were:—

Displacement...	...	...	...	...	...	6½ tons
Length overall	...	...	...	...	...	28.5 ft.
Beam (with torpedoes)	...	...	...	...	...	4.75 ft.
Diving depth	...	...	...	...	...	30 metres
Endurance—						
Surface	...	...	...	...	...	125 miles at 5 knots
Submerged	...	...	...	...	...	10 miles at 5 knots

324 of this type were built.

*The Molch.*—This, too, was a one-man submarine designed by a torpedo testing establishment in Germany.

It had a displacement of  $10\frac{1}{2}$  tons and was armed with two torpedoes which were slung under the hull.

This craft was intended to operate submerged only and had a speed of 5 knots.

Its chief advantage over the *Biber* was its ease of production. The torpedo establishment had used as much available equipment as possible and produced practically an entirely cylindrical hull.

It was propelled by motor and batteries. Its principal features were:—

Displacement...	...	...	...	...	...	10½ tons
Length	...	...	...	...	...	35.4 ft.
Beam	...	...	...	...	...	3.6 ft.
Diving depth	...	...	...	...	...	40 metres
Submerged endurance	...	...	...	...	...	40 miles at 5 knots

390 of these were built.

*The Seehund.*—This was probably the most successful of the German midgets and its design was embarked upon after lessons had been learned from a large number



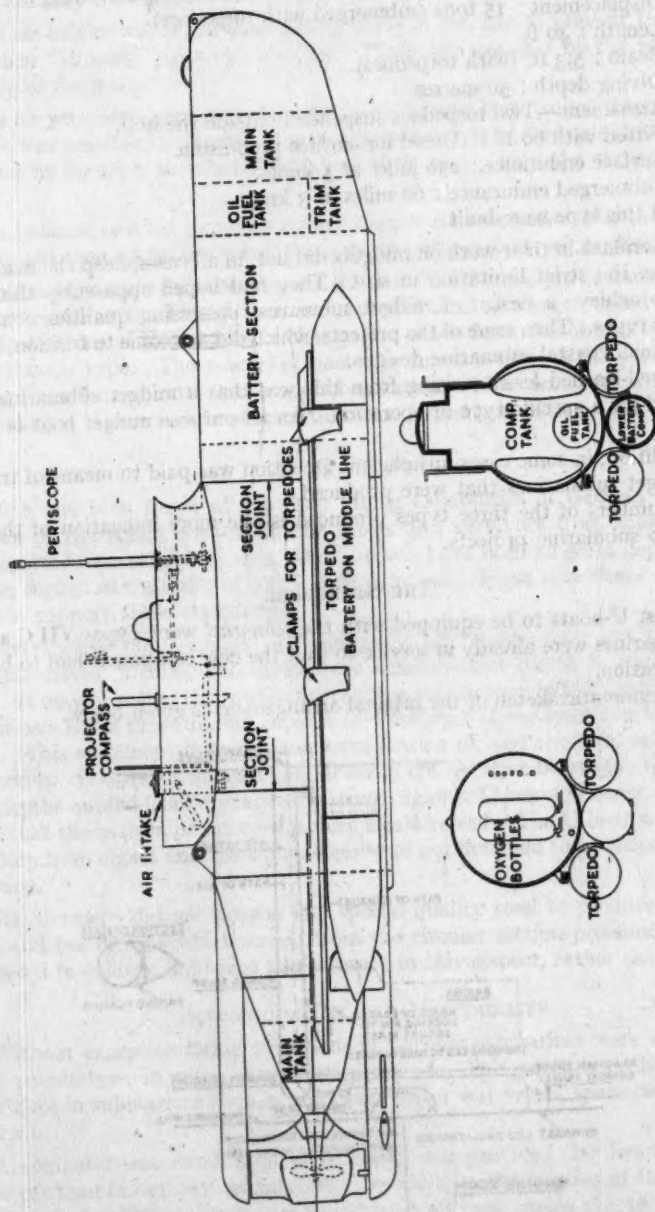


FIG. 4.—OUTLINE OF MIDGET "SEEHUND"

of other projects. It was a two-man submarine, and was equipped with a Diesel engine.

Fig. 4 gives a general outline of the design, its main features being :—

Displacement : 15 tons (submerged with torpedoes).

Length : 40 ft.

Beam : 5.3 ft. (with torpedoes).

Diving depth : 50 metres.

Armament—Two torpedoes suspended outside the hull.

Fitted with 60 H.P. Diesel for surface propulsion.

Surface endurance : 250 miles at 5 knots.

Submerged endurance : 60 miles at 3 knots.

250 of this type were built.

The Germans in their work on midgets did not, in all cases, keep the main object in view, i.e. the strict limitation in size. They had hoped apparently that it was possible to achieve a design of midget submarine possessing qualities comparable with larger types. Thus some of the projects, which did not come to fruition, became, in effect, small coastal submarine designs.

One well-learned lesson arising from this was that a midget submarine should be designed for a specific type of operation. An all-purpose midget boat is impracticable.

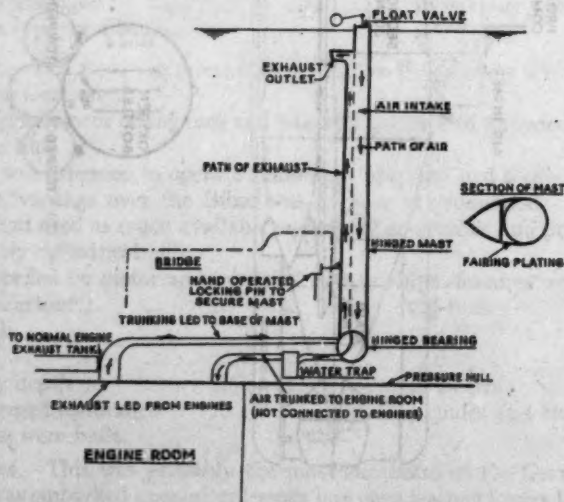
In addition, in some cases, insufficient attention was paid to means of transport of the midget submarines that were produced.

The numbers of the three types produced is one more indication of the effort accorded to submarine projects.

#### THE SCHNORKEL

The first U-boats to be equipped with the *sch snorkel* were Types VII C and IX. These submarines were already in service so that the new equipment had to be fitted as a modification.

A diagrammatic sketch of the original arrangement is given below.



In the original equipment the *mast* was of the hinged type and contained both the air intake and exhaust trunking. The two leads were taken to the hinge of the mast where they were separated into two runs to the engine-room.

The air intake was fitted with a float valve at the top to prevent the influx of water when "dipping" in rough weather. The valve was shut by the action of the buoyancy of the float.

The air was discharged into the submarine, having been passed through a water trap. It was possible to circulate a good proportion of the fresh air throughout the submarine as the main ventilating fans took their supply from the vicinity of the air inlet.

The exhaust was led from the normal engine exhaust hull valves to the base of the mast and then up to just below the waterline where the trunking was turned aft.

The requirements for the Type XXI and XXIII designs included *sch snorkel* equipment, and as the hinged type was resistful and submerged speed was one of the main features of these types, a change was made from the hinged type of mast to a periscope type. The *sch snorkel* mast was fitted astern of the periscope, thus avoiding interference with periscope observation which occurred with previous arrangements. The principle of operation was the same as before.

#### DIVING DEPTH

Much has been heard of the deep diving capabilities of German submarines. Members of the Allied anti-submarine forces and survivors from sunken U-boats have reported, on many occasions, that U-boats have been to great depths without collapse, figures of the order of 900 ft. being quoted. There is evidence from instruments to support these statements.

Nevertheless, the Germans' own design figures are less than 400 ft., indicating that hull valves, fittings, and tanks were designed and tested to conform to this figure. It may be stated that no German submarine constructed for operations during the last war had a pressure hull capable of a designed operational depth in excess of 500 ft. This statement is made after examination of, and trials in, actual German submarines. It does not suggest that U-boats did not dive below 500 ft., but at the great depths quoted from operations with and against U-boats, it is not exaggerating to say that the margin of safety was very small indeed. The U-boat was not taken very deep from choice and the submarines were not designed to go there as a routine operation.

The Germans did not possess any special quality steel to produce good diving depth and the designs which varied from the circular section pressure hull are not considered to achieve improved performance in this respect, rather the reverse.

#### ACCOMMODATION AND HABITABILITY

Without exception living conditions in German submarines were worse than in Allied submarines, in some cases very much so. This point is probably of more importance in submarines than in any other major war vessel, space being at such a premium.

A comparatively small number of bunks was provided, far less than the aim of one per man in our own submarines. In addition, the number of the crew in the U-boats was less than other navies would have allowed, giving rise to greater strain on the users.

The messing, washing, and sanitary arrangements can only be described as inadequate. It was, in general, only possible for some 20 per cent. of the ship's company to be seated for meals at one time. Of course, it may be argued that the Allies set too high a standard, but a few days at sea in any submarine would probably dispose of this view.

The Germans themselves did, in fact, come to realize the error of poor accommodation, because the Type XXI saw a definite improvement, though still below Allied standard, and the fitting for the first time of air conditioning equipment.

#### CONCLUSION

It is felt that the most outstanding feature of the story of the German U-boats of the 1939-45 War is the numbers produced. Beginning with a fleet of some 57 boats, the Germans were to produce numbers, of the most varied types, equivalent to a new submarine every second day for the whole duration of the War, this at a time when the nation was engaged in major warfare on the land and air fronts and subjected to most severe air bombardment.

No paper such as this can give a complete picture of the work done by the Germans or the range of developments explored. To cover the whole story would take a number of volumes.

The Type XXI was not tried in war, but few will say that it would have been defeated at once or that it was the last word in submarine design.

Thus, then, to a country such as ours, absolutely dependent on the passage of ships on the sea, the story of the U-boat effort should be a grim warning. The submarine is still far from defeated, and to combat a pro-submarine effort on similar scale would require an even greater anti-submarine effort.



## THE ROYAL MARINES

By GENERAL SIR DALLAS BROOKS, K.C.B., C.M.G., D.S.O.

On Wednesday, 11th February, 1948

ADMIRAL SIR HAROLD BURROUGH, K.C.B., K.B.E., D.S.O., in the Chair

THE CHAIRMAN: I regard it as a very great privilege to be in the Chair to-day to introduce the Lecturer. There can be few people who have achieved such heights of versatility as General Sir Dallas Brooks. He is, in fact, an outstanding example of the versatility of the Corps which he commands. In the first World War he saw service in Gallipoli, Zeebrugge and at sea, and prior to becoming Commandant-General of the Royal Marines—and incidentally a full General at the age of 52, he was Head of the Military Division of the Political Warfare Bureau during the late war. In addition to this, he has athletic prowess which must be the envy of all of us. He is a hockey international, a Navy and county cricketer—he captained the Navy at cricket—a scratch golfer, and he has that particular position of being the leading player in our annual match for the Admirals against the Generals and Air-Marshals.

### LECTURE

I N talking about the Royal Marines, I am speaking about a Corps of sea-soldiers who are an integral part of the Navy—that Service whom the World has nicknamed "The Silent Service." I think it is logical that if the whole is silent, the components should be more silent! I mention this because I believe it explains a curious and relevant fact. It is that the whole World knows of the Navy, its history and its unique achievements; but how few know *how* it works? So it is, although for different reasons, with the Navy's Royal Marine component. Most people know of the Corps. Few know what they do; far less how they do it.

Although I do not know, I think it was for this main reason that the Council of the R.U.S.I. invited me to make this address this afternoon. I will divide the subject under the three broad headings of "Yesterday," "To-day" and "Tomorrow."

### YESTERDAY

On "Yesterday," I will be very brief. It was as long ago as 1664 that the first Regiment of Marines was raised for service under the Admiralty and known as "The Duke of York and Albany's Regiment of Foot." Since then, it is their proud record that they have taken part in every sea battle; and on every continent they have fought in all the wars in this period, both large and small, sometimes as part of naval forces, sometimes in concert with the Army and sometimes as independent units. In the peace period, too, between these wars, they have played a prominent part in Imperial policing all over the World.

I will leave "Yesterday" at that, because historical records can fill in the detail far better than I can.

### TO-DAY

Now to turn to "To-day"; and I will divide the subject matter under five sub-headings.

- (a) The principles governing employment.
- (b) Functions.
- (c) Characteristics.
- (d) Organization and administration.
- (e) Reserves.

## PRINCIPLES

For a Marine Corps, I believe that there are two over-riding principles which should govern employment.

First, the vital one that their duties must be "balanced" as between sea and land service. By this I mean we must have roles which require us to be ready to fight both on sea and on land.

Between the last two great wars we had no specific land role as part of our duties. As a result, efficiency was, to my mind, seriously impaired. In this connection, it is significant that during this same period a Marine was doing more time afloat than a seaman—not a very logical state of affairs you will agree.

The second fundamental principle is that we should not undertake tasks which can more logically be performed by another Service or branch of a Service.

During the late war, this principle was overlooked and we tended to duplicate military organizations and functions: for example, we manned anti-aircraft and coast defence batteries; we carried out Royal Engineer services in the erection of piers, pontoons, roadways, gun emplacements, etc.; we prepared landing grounds and built hangars and we provided ground and anti-aircraft defences for many aerodromes; we also produced an Infantry Division which, due to a complicated and somewhat political set of circumstances, was never used in action as such. So you see, there was hardly a service afloat or ashore in which we did not participate to a greater or lesser degree.

Let me say at once that this state of affairs was not the fault of anyone in particular, except possibly the enemy! The truth is, of course, that you have to wage war as you can and not necessarily as you would like to. This applies particularly to this Country, who are the non-aggressor nation; and so, on the outbreak of war, the enemy inevitably possesses the initiative with all the advantages that accrue. Probably the paradoxical situations I have mentioned were inevitable. Yet, the principle I have mentioned stands and should be adhered to so far as war circumstances permit.

## FUNCTIONS

Next, "Functions." These were re-defined by the Admiralty in 1945, as the result of war experience.

In the broadest terms, the policy of our employment is to assist the Navy in the exercise of sea power by undertaking tasks demanding a knowledge of both sea and land warfare. Our duties to implement this policy are laid down under three categories of functions.

The first is to carry out our traditional role in H.M. ships and, as the Navy's soldiers, to be available for operations on shore. This role is basic. It is during this service that the Marine gains that naval background which is, to my mind, an essential characteristic for his many tasks. Without it, he is and can be no true Marine.

Now, while serving afloat, the Marine Detachment's first duty must be to man their share of the gun armament and so help to fight the ship. Similarly, ship's duties must normally take precedence over military training. And so, when embarked there will be considerable difficulty in maintaining the standard of military efficiency required of a sea-soldier. It is for this reason that I attach the greatest importance to a really good grounding in basic military training before a Detachment embarks.

Yet, for the reasons I have stated, it must be accepted that the average Detachment, if landed, could not hope to compare with, say a troop of Marine Commandos. With the best will in the World, their physical endurance and tactical ability deteriorate. Although they have the skill and morale to be able to form an effective land fighting unit in an emergency, and for a limited period of time, they should not be committed to prolonged action against well-trained troops. That is not their job.

Let me mention just one typical example of a land task carried out by sea-going Marine Detachments in the last war to prove their value. In May, 1940, during the operations against Narvik, news reached H.M.S. "Resolution" that a party of Germans with British prisoners were in the vicinity. In the space of a few hours a hundred Royal Marines were fallen out from their "action stations" where they were closed up at the guns. These men were then embarked in "fighting order" in a trawler and landed, accompanied by a Norwegian guide. In a quickly executed "cutting out" operation, through thick snow, the Detachment were able to surround the Germans in a village, release the British prisoners and capture the party of the German battalion which was guarding them.

Our second major function is to provide Commando Units. These Commandos provide us with that "balance" on the land side about which I have already spoken.

We can define a Commando as a lightly-equipped infantry unit, with a minimum administrative tail, trained for cliff and assault landings on different natures of beach. They may be employed in raids, on special tasks in a major assault—such as the capture of a flank coastal battery, as at Dieppe—or in the seizure of a port.

In peace, their "lightness" makes them particularly useful for Imperial policing. They can be moved by sea or by air so relatively easily and quickly. Only last month one unit of our Commando Brigade, at present in Malta, was quickly moved in H.M. ships to Haifa for security duties in that port.

I think that the ultimate qualities required of a Commando Marine are these. As well as being a highly-trained infantryman, he must also be an individualist with at least one specialist qualification, such as a cliff climber, a parachutist or a small boat expert. I suggest one deduction to be drawn from this is that the length of the training necessary to achieve this standard requires a long-service man.

Finally, as regards Commandos, it is interesting to note that to-day the French, the Belgians and the Dutch have all raised comparable forces. It is equally significant that United States Marines have recently moved into the Mediterranean alongside our Commando Brigade.

Our third main function is to carry out certain duties within a Naval Assault Force, including the manning of minor landing craft. As we all know, in the initial assault on Normandy and in many raids on the Arakan coast we manned large numbers of these craft.

It may be open to question whether in discharging this duty we are not usurping a function which is the more proper duty of the Seaman Branch of the Navy. Alternatively, the Army may feel that, as the assault in the future may be carried out in armoured amphibians, they would prefer to provide the drivers themselves. Yet I have a strong conviction that it is in this sphere that our true hunting ground exists, namely, the line where sea meets shore and where the Army meets the Navy.



It is in this area that Marines can act as such a helpful link in the broadest sense, between these two Services.

Finally, before I leave functions, I must mention our close association with Naval Aviation. I suppose that the rapid evolution of air power is the most important single factor which has arisen in the lives of any of us in the last ten years. Together with the development of radar, it has probably changed the character and tactics of naval warfare more than anything else. It follows that if Marines are to play their proper part in the future they must be air-minded. In fact, of course, ever since the inception of the Royal Naval Air Service in 1914, a certain number of our officers have been pilots. But to-day, more than ever, we need officers who have experience in this branch; and I believe that Naval Aviation is equally alive to the value which a Marine pilot can bring to them. I also consider that a percentage, at least, of our troops must continue to be trained in air-dropping; only so can we be ready to meet efficiently the requirements of the future.

#### CHARACTERISTICS

Having briefly discussed functions, I would like to mention two characteristics of several others which I regard as fundamental to a Marine—those of versatility and ubiquity.

##### *Versatility.*

To be a sea-soldier (alias a Marine) postulates that the Corps as a whole and each individual member of it must be versatile. Versatility comes from experience and practice. But it does not spring from the experience of one generation. It is passed-on cumulative experience down the years. It can, of course, be a dangerous characteristic if uncontrolled. Because a versatile man can so easily develop into the jack-of-all-trades and master of none. But when controlled—and correct functions ensure control—it is, I suggest, an invaluable virtue for the fighting men of a maritime Empire. So it is of great importance that in peace this traditional quality should continue to be engrained.

Then again, versatility to be efficiently exploited, must be based on the highest standards of discipline, in order to produce a fighter who is self-reliant and capable of improvisation. So far, no one has discovered a substitute for drill as the best basic means of achieving this quality. Maybe this is the main reason why our Corps always paid so great an attention to ceremonial.

##### *Ubiquity.*

The dictionary defines ubiquity as "ability to be in an indefinite number of places at one time." That, of course, presumes "omni-presence," which please understand I am not claiming for my Corps! But I do say that our history justifies my contention that ubiquity in its narrower sense is and must be a characteristic. In truth, of course, it is in many respects the military complement of versatility.

#### ORGANIZATION AND ADMINISTRATION

This leads me to organization and administration.

The Head of the Corps is styled the Commandant-General. He has his headquarters in the Admiralty where, with a small composite staff, he acts in a dual capacity. On the one hand he is an adviser to the Board of Admiralty on all Marine affairs; on the other, he commands all Marines serving under the Army Act in the United Kingdom.



This latter responsibility is exercised through three Major-Generals who command respectively all establishments in the areas of the three main Naval Ports. But unlike the Navy, where the Depots at each of the Home Ports have similar functions and manning responsibilities, our Groups are organized on a functional basis. That is to say, the Chatham Group is responsible for the administrative services of Pay, Records, Drafting and Promotion of all N.C.O.'s. Portsmouth Group is responsible for all forms of sea service training, including Landing Craft training and Combined Operations training; while at Plymouth is carried out the whole of our military training including the Commando specialized training and recruit basic training.

In this way, each of my Major-Generals is discharging an appointment where his energies can be directed to one end; while at the same time our available facilities for accommodation and training areas are put to the best use. In a Corps of our size, this organization, besides reducing overheads, allows a greater flexibility for expansion in times of emergency.

As regards numbers, during the recent war we expanded from 12,000 to nearly 79,000. The process of reduction to our peace-time strength is now nearly completed, and in March of this year the majority of National Service men will have returned to civilian life. We shall revert once again to a long-service organization of about 14,000—15,000.

#### RESERVES

I now turn to the question of reserves. In the past, we have had only the Royal Fleet Reserve and Pensioners from which to draw at the outbreak of hostilities. These numbers have proved all too few, and it is clear that for any future emergency would be quite inadequate.

In consequence, as I expect you all know, there has recently been Parliamentary approval given to the formation of a Royal Marine Volunteer Reserve. I am at present in the process of working out its charter.

In addition, I hope to attract and make ourselves known to the youth of the country by taking a more active share in the Cadet Corps movement, where we only have very junior contingents at present.

So much for the Corps as it is to-day.

#### TO-MORROW

What of the future? I think we must divide it into two periods: Period I, the next five to ten years; and Period II, ten years hence. For both periods, as in the past so in the future, the fate and fortunes of the Royal Marines will rest with the Royal Navy.

Dealing with Period I, the picture seems to look like this. So long as the present weapons remain the fashion, the various forms of attack can be more or less countered by existing defensive measures. But the time is approaching when the balance will swing heavily the other way and temporarily the offensive may be all-powerful. It will not be quite yet, because most of the nations of the World are too bankrupt and too wrapped up in stabilizing their economies to spend the money required to re-arm on modern lines. Therefore, however rapidly research and development proceed, there is little likelihood that any but minor changes can be effected in weapons within this period. So, should a major conflict arise, it would seem that the war will be waged at the start with much the same weapons with which we won the last. There will be fewer capital ships and considerable

advances in the performance of aircraft and submarines. But the methods of fighting and hence the roles of our forces will have changed but little.

What will have changed will be the initial speed of the onslaught. We shall not be granted a period of time in which to marshal our strength as in the past. All the more reason, it seems to me, to have ready small and highly mobile forces capable of holding the breach at the outset. I doubt that the Army will be in a position to provide forces of this description. They will have too many other grave responsibilities. And so I think that Marines will be called upon as "stop-gap forces" to operate in the early stages until the more heavily-armoured and so slower-starting forces of the Army can get going.

If I am right, it would seem to follow, for example, that Marine Commandos should be so stationed in peace as to enable them to reach, in the minimum time, areas in which trouble is likely to arise. You might counter this by saying that an emergency job in peace could be equally well or better performed by an Army unit, garrisoned near the scene of the trouble. But Army units, with garrison commitments, have not the flexibility of Marine units. A move by sea to the scene of operations is likely to mean transport in H.M. ships. It so happens that the organization of a Commando fits in very well with the carrying capacity of H.M. ships and, as their administration services are much "lighter" than for the corresponding number of Infantry, they can be embarked much more quickly. Then again, the Marine, by virtue of his naval upbringing, naturally fits quickly and harmoniously into a ship in which he is embarked.

I conclude from all this that not only should we Marines continue to train on Commando lines, but we should also continue to operate minor landing craft and likewise provide Detachments for H.M. ships. On the other hand, I do not consider that the manning and installation of coast defence guns and the protection of airfields are proper or suitable Marine roles. A Marine should be employed on an active as opposed to a static job; and if he is to become efficient as a sea-going Marine, and also as an infantry soldier, he has quite enough on his plate.

Finally, Period II of the future—ten years and more ahead. This becomes even more a matter of sheer crystal gazing. So much depends on the general shape of our forces as a whole. For example, if by then the weapons of mass-destruction are in production, a re-orientation of our forces will also have taken place. Quite obviously too, the air will play an increasingly predominant part, not only by itself but as a vital support to our sea and land forces. We can also safely deduce that the war will be total and will be waged at a tempo far greater than anything the World has ever experienced in the past.

In these conditions, I foresee the role of the Navy concentrated very largely on the protection of our shipping against air and submarine attack. This will imply a large increase in aircraft-carrier strength, in ships carrying new types of A.A. weapons, and in new methods of anti-submarine war. All this may well be at the expense of capital ship strength. If this is so, then the number of Marines required to serve in our traditional role is likely to diminish. On the other hand, as in a war of the near future so in a war of the more distant future, in my opinion there will be a necessity for the employment of Marine raiding forces.

These operations may be in the nature of minor raids to destroy enemy equipment, to capture prisoners, or to obtain information; equally they may be to secure flanking positions for a major assault; or to carry out a feint landing or to secure a base from which H.M. ships can operate. I do suggest that for these operations

large Army formations are unsuitable. It is uneconomic to divorce single units from their parent formations and train them for these purposes. I deduce that there is a real requirement to have a military force, at the disposal of the Navy, capable of carrying out these types of task; for they are tasks for which the Marine is specially suited. So I feel that the provision of such troops is an essential accessory to the Navy of the future.

One last word. So long as the three Services remain entirely separate entities, each striving after its own interests, as it is bound to do when money is short, there is always a danger of the Corps falling into the trough of the wave and becoming engulfed in the struggle for existence. But I believe that as the new weapons are produced, and the functions of the Services are correspondingly modified, so gradually, in many spheres, there will be moves towards complete unification. The more unification is achieved, the clearer, I believe, will become the requirement for a highly efficient tri-phisibious raiding force, trained to operate in all three elements. I am in no doubt that the Royal Marine is the type of man to undertake this sort of operation.

#### DISCUSSION

COLONEL R. A. R. NEVILLE, R.M.: In your address, Sir, you made no reference to the close association of the Royal Marines with the United States Marine Corps. I think that might be one of the most important parts of our job in the future—to foster and consolidate that association with the United States Marine Corps.

THE LECTURER: I did not mention the United States Marine Corps largely because I did not quite see how it fitted into the shape of the talk I tried to give, but I can confirm that the American Marine Corps and ourselves have a very close affiliation with each other. We are in constant touch, and we know broadly how we are evolving in regard to our different roles and functions. I think that an officer in the U.S. Marine Corps would agree with me if I said that the fundamental difference in their roles and our roles in the past has been that whereas we have tended to weigh the balance down on our sea side, they have tended to go the other way.

LIEUT.-COLONEL L. V. S. BLACKER: It would be very interesting if the Lecturer would give us his opinion about the matter of Territorial connection, especially with regard to the new Volunteer Reserve and the Cadet Units.

THE LECTURER: I must be very careful in answering that question because, to use the official slogan, it is *sub judice*. When we launch the Royal Marine Volunteer Reserve, if we are going to conform to the first principle for the employment of Marines which I have mentioned—balance, it would seem that some working arrangement must be found where we are in some way and in some areas affiliated to the Territorial Army Associations, otherwise, it seems to me that from the word "go" this balance will be lost. On the other hand, if we came down completely on the side you have mentioned, we should lose the balance in the other direction, and so some of our centres equally must be closely affiliated—I am using that word loosely—to the R.N.V.R. But I cannot answer the question in detail this afternoon, because it is under consideration by the Board at the moment.

BRIGADIER H. A. JOLY DE LOTBINIERE: Could the Lecturer tell us whether the Royal Canadian and Royal Australian Navies are going to raise Marines? They have not done so in the past.

THE LECTURER: I cannot answer for Canada, because I do not know. There is no intention of raising Marine forces in Australia at the moment, so far as I am aware.

MR. MARTIN MADDAN: I would like to ask the Lecturer if I understand him aright when he said that as from April the Marines would be entirely a Regular force and, if that is so, how will recruits to the Volunteer Reserve be found in future?



THE LECTURER : Taking the short-term view, recruits, I think, will be found mainly from the large number of National Service men who have gone or are going back into civilian life ; and, due to the existence of our Royal Marine Association, we not only know where those men are living, but we also know more or less precisely the numbers who are willing to join. So on the short-term view there does not appear to be a very difficult problem.

I entirely agree with you that, on the longer-term view, one weakness of a long-service Service is the difficulty of raising reserves in sufficient numbers. One of the great advantages of National Service is the ease with which Reserves can be provided.

MAJOR-GENERAL A. H. HORNBY : The Lecturer mentioned flexibility. I agree that when the Royal Marines are used with the Royal Navy they are perhaps the most flexible forces you can imagine, but when they are used with the Army they are sometimes most inflexible.

I will illustrate it by mentioning the Royal Marines with whom we in the 8th Army had the pleasure and honour to be associated with in Sicily. They took over completely one of our bases, and they did everything to the best, but as soon as there was any suggestion of using them outside the limits of that base, there were many objections. We fell in love with the Royal Marines so much that we tried to move them on to Italy, but we found that the Commander-in-Chief, Mediterranean, thought that to be a very bad idea.

THE LECTURER : It is very nice to see General Hornby here this afternoon, because in many respects we regard him as one of ourselves ; and when he talks about Marines being inflexible in certain circumstances, I know what he means, and I would agree with every word he says.

LIEUT.-COLONEL C. E. ROBERTS : As the number of capital ships is reduced—which seems bound to take place—will there be difficulty in providing sea training for the Royal Marines ?

THE LECTURER : I think that, looking ahead and trying to discern the future shape of the Navy, which I am really not very competent to do, the question that you asked is a real one in the sense that the present main role of the Marine afloat—to wit, to man a proportion of the primary armament, will not be so easy to achieve ; but in my opinion future naval weapons are likely to be such that I doubt whether we shall retain that function. I think that our nautical role, which we must have as Marines, will be achieved in quite different ways because of the different composition of navies in the future than in the past. It is awfully hard to be specific about it.

MAJOR M. C. SANDS, R.A. : Do I understand it is the policy in the future that all commandos will be furnished by the Royal Marines ?

THE LECTURER : I can only answer that question like this : at the end of the War, you may remember the Chiefs of Staff recommended to the Prime Minister that Marines should undertake this responsibility, and so it was passed to the Admiralty.

On the outbreak of another war, whether it would be the wish of the War Office to raise commando troops is difficult to forecast. One can only say that it is the policy of the Government to-day that we should assume that responsibility and keep that technique alive. What would happen on the outbreak of a war, it is idle to speculate.

CAPTAIN E. ALTHAM, R.N. : The Lecturer said he was indulging in crystal gazing in looking ahead after a period of ten years' potential peace, and to a time when, perhaps, war will have taken on a new facade altogether. But is it not an enduring principle that you cannot win a war until you are really sitting on the enemy's head ? Ultimately you have got to get into his country and stay there for as long as it is militarily necessary or economically possible.

If that is so, then, sooner or later, after we have indulged in long bowls with atomic or high explosive bombs, we shall, once again, have to invade. Therefore, I suggest,



there will always be a future for the Royal Marines as the spearhead of any form of "landing."

But I wonder whether the tactics of such landing or invasion may not change. After all, in these modern days it is a crude and clumsy way of conveying human bodies across a narrow or even a broad strip of water to transport them in cockleshells of extremely uncomfortable landing craft and of setting them down on an unprepared beach, when we can carry them so much more easily and speedily by air.

The Lecturer alluded to the increasing association there must be between the Royal Marines and the Air, and I wonder whether that is to be taken a stage further and whether it is contemplated that commandos will be dropped from the air and whether paratroop training is to be part of their regular training?

THE LECTURER: It is part of our training.

#### THE CHAIRMAN.

If there are no more questions or comments, there are just two or three points I would like to stress before we adjourn.

The first, I think, is the great importance of that proper balance as between sea and land service for the Royal Marines. Had that balance been achieved between the two great wars and a specific land role produced in the shape of commandos, it might well have been that the Vaagso raid of December, 1941, where I had the privilege of being the Naval Commander, would have been undertaken by Royal Marines, since it was one of those operations, I think, which was entirely suited to their characteristics.

In saying this, I do want to emphasise most strongly that that raid could not possibly have been done better than it was done by No. 3 and 4 Army Commandos under Brigadier J. C. Haydon. I merely point out that that is just a typical sort of operation for the employment of Royal Marines.

My next point is the value of the Royal Marines to act as a link where sea meets shore, as the Lecturer pointed out, and where Army meets Navy. This, we all know, was well proved in the Normandy landings and many other amphibious operations, and it should be equally true to-morrow as it is to-day.

I am sure that all of us welcome the Royal Marines Bill which has just had the approval of the House of Commons, and which will provide the Royal Marines with a Volunteer Reserve. We know from the Royal Naval Volunteer Reserve how quickly we can expand on mobilization, and it is equally important that the Royal Marines should have a Reserve of these young men who can quickly undertake an operational role. I am glad to see that my late Movements Officer in Germany—a Colonel of the Royal Marines, is continuing to help his Corps in the House of Commons.

As General Brooks has said, little is known by the Services and the general public about the Royal Marines, and all should learn something from his very interesting lecture. I, for one, have been aware for some time of the great changes that have been taking place in the functions of the Royal Marines, and I should like to say to the naval officers present that we, even more than the other two Services, are liable at times to misunderstand the Corps. Because we are in the same Service and because we have served with them afloat and know that side of their existence so well, we are inclined to forget that there are two sides to the coin. The Royal Marines' functions in commandos and combined operations are becoming increasingly more important, and I am sure will continue to do so in the future, and the percentage of the Corps serving afloat in their traditional role is, I feel certain, bound to decrease to some extent.

In conclusion, I know I shall be expressing your wishes in thanking General Brooks for the very excellent and most interesting picture that he has given us this afternoon.  
(Applause.)

## THE EFFECT OF AIR POWER IN A LAND OFFENSIVE

By AIR CHIEF MARSHAL SIR JOHN SLÉSSOR, K.C.B., D.S.O., M.C.

**I**N these days when despatches by Army Commanders are constantly being published, it may perhaps be of some interest to have a look at a contemporary view by an Air Force Commander who was closely associated with one of our land campaigns.

Soon after the capture of Rome in the first week of June, 1944, General George Marshall—the U.S. Chief of Staff, and General Arnold—the Commanding General U.S. Army Air Forces, visited Allied Force Headquarters in Italy to discuss future operations in the Mediterranean, including the invasion of Southern France. Before leaving for America, General Arnold asked me for my views on the extent to which air power had contributed to the success of the operations leading up to the capture of Rome, and I gave him the following notes which were dated Caserta, 18th June, 1944. It was not my good fortune to take part in OVERLORD or the subsequent campaign in North-West Europe; but I do not think that Commanders who fought in that campaign would find anything to disagree with in these notes, which I hope may provide an interesting commentary on the employment of air power in one of the great land campaigns of the late war.

### NOTES ON THE OPERATIONS LEADING TO THE CAPTURE OF ROME

It may clear the issue to mention first the things that air power can *not* be expected to do in a land campaign of this nature:—

(a) It cannot by itself defeat a highly organized and disciplined army, even when that army is virtually without air support of its own. The German will fight defensively without air support or cover, and does not become demoralized by constant air attack against his communications and back areas. The heaviest and most concentrated air bombardment of organized defensive positions cannot be relied upon to obliterate resistance and enable our land forces to advance without loss.

(b) It cannot by itself enforce a withdrawal by drying up the flow of essential supplies. The German's efficient Q. organization, his policy of living on the country regardless of the interests of the inhabitants, and his extreme frugality and hardiness result in an unsurpassed capacity to maintain his stocks in apparently impossible circumstances at the essential minimum, *in circumstances when he is not being forced to expend* ammunition, fuel, vehicles, engineer stores, etc., at a high rate.

(c) It cannot *entirely prevent* the movement of strategic reserves to the battle front, or tactical reserves from one part of the front to another, or of forward troops to fresh positions in rear.

(d) In short, it cannot absolutely isolate the battlefield from enemy supply or reinforcement.

(e) It cannot absolutely guarantee the immunity either of our forward formations or back areas, port installations, base depots, airfields, convoys at sea, etc., against the occasional air attack or reconnaissance.

What it *can* do, and has done in the present battle which, it must be remembered, began with the preliminary air offensive on about 15th March, is to make it impossible for the most highly organized and disciplined army to offer prolonged resistance to

a determined offensive on the ground—even in country almost ideally suited for defence; it can turn an orderly retreat into a rout; and virtually eliminate an entire army as an effective fighting force.

The converse of (a) above is equally true. An army by itself cannot, in modern warfare, defeat a highly organized and disciplined army on the defensive. The power of the defence on land has not been overcome by the tank or by improved artillery technique, but by air power. It is doubtful whether anyone could be found to deny that, if there had been no air force on either side, the German Army could have made the invasion of Italy impossible except at a cost in national effort and human life which the Allies would have been unwilling if not unable to face. This is dealt with in more detail in the following paragraphs.

The first thing the Air Force can do, to a degree which no one would have believed possible two years ago, is so to dominate the air in the battle area and in the enemy's rear that our Army can make its dispositions, supply and administrative arrangements in the most convenient manner, virtually regardless of the enemy air threat. No one who is familiar in Italy with the vast supply dumps and camps—laid out without regard to dispersion—the crowded shipping in Naples harbour, the endless columns of vehicles almost nose to tail on the roads right up almost to the front line, the railways working to capacity night and day, the packed airfields, can adequately appreciate the appalling difficulty of supplying, maintaining and moving a great army in the conditions prevailing the other side of the line. It is hardly an exaggeration to say that the Army can safely disregard, and has virtually disregarded in Italy, the existence of an enemy air force. There have been occasions, such as in the Anzio beach-head, where the *Luftwaffe* has been a nuisance; when inconvenience has been caused by the sinking of an occasional ship with important cargo; and when a few casualties have been caused by a sneak raid. But, taken by and large, the *Luftwaffe* has ceased to exist as a factor of any importance in the land battle in Italy. The enemy has even been denied effective reconnaissance, while on no occasion has any Allied Commander ever had to go short of information required from visual or photographic reconnaissance. An invaluable influence on the land operations has been exercised also by the Artillery observation aircraft which have been able to get on with their job virtually unhampered.

Largely owing to this domination of the air, the air forces have been able to create a situation on the enemy's lines of communication and supply in which his continued maintenance of upwards of eighteen divisions South of Rome was little short of a miracle. With the exception of literally only one or two very short periods during which one relatively unimportant stretch of line was open, every single one of the railways South of the line Pisa-Rimini has been kept cut in several places since 24th March, and immense dislocation has been caused by a series of very successful attacks by heavy bombers on focal points on the railway system North of the Apennines. For over three months before the assault on 12th May, enemy M.T. were being destroyed at the rate of twenty to thirty a day, representing a monthly loss of the order of 50 per cent. of the M.T. available in Italy, in addition to many others damaged; and, although the enemy was able to supplement his road and rail lift to a meagre extent by seaborne supply to the small ports on both coasts, movement of his shipping by day was brought to a standstill, and he was never able to approach the programme in terms of weekly tonnage which we know he had set himself.

Nevertheless, the aim we set ourselves at the end of February of making it impossible for the enemy to maintain his armies South of Rome was not fulfilled before the opening of DIADEM. At the beginning of March he had substantial reserves



in his depots and forward dumps, accumulated during the bad Winter weather when flying was impossible for days on end, and in spite of the devastation of his communications and transportation he was able, by superb organization and unremitting labour, to trickle forward a daily tonnage adequate to maintain his forward stocks well above the danger level *so long as he was not being forced to fight*. It must be remembered that, except for the short and abortive battle of Cassino in March, the Italian front was inactive from the close of the enemy's last attempt to drive in the beach-head late in February till the opening of DIADEM on 12th May. In these circumstances it proved impossible for the air to do more than hold the position on the enemy's supply front and pave the way for the joint offensive in May, by preventing the enemy from putting himself in a position to resist for a longer time than the Allies were in a position to continue attacking. It should not be forgotten in the flush of victory that the real break-through did not come till 1st June—twenty days after the opening of the offensive; and it is a fact that by the end of May General Alexander thought it probable that it would be necessary to call a halt, rest his tired divisions, regroup and build up for a further staged attack on the Uffington line. But by this time the enemy's reserves of the two vital commodities—fuel and ammunition, were well below the danger point; his capacity to distribute stocks from the depots to units in sufficient quantities to meet the requirements of intensive fighting had been paralysed by his enormous losses in M.T. and the catastrophic condition of his roads. This, combined with fatal delays imposed by air action on the movement of reserves and with fatal reduction in the fighting efficiency of these reserves on arrival—particularly of the Hermann Goering Division—"snapped the elastic," and he broke.

It is not suggested that the break was due to the Air Force alone; the Army played its essential part by breaking *in*, maintaining the pressure, forcing him to fight and expend, and exploiting his weakness by the thrust on to the Alban Plateau and to Valmontone. But there is not the slightest doubt that the break *through* would have been impossible but for the Air Force. And we now have ample evidence to prove that two vital contributory factors were shortage of fuel and of ammunition.

It has been said above that air power cannot prevent the movement of reserves. DIADEM has proved, however, that it can delay and disorganize it to an extent that will be fatal in circumstances when it is essential to the defence to be flexible, to move reserves quickly to a threatened point, and have them in a position to fight effectively on arrival at that point. We have ample and irrefutable evidence of delays imposed on the movement of strategic reserves by air action; probably the most critical of these was the move of the Hermann Goering Division, who were brought in from the Leghorn area where they had been resting and refitting as a reserve, it is believed, for the Western front. One of the most remarkable incidents of the whole battle was the way in which that redoubtable division, brought in to fill the vital gap about Valmontone, failed to have any important influence on the battle. We now know that its arrival was delayed, it suffered heavy losses in men and vehicles from air action on the way in, and its morale was at a low ebb by the time it found itself in all the confusion of a fluid battle called upon to putty up a gap which, by the time it arrived, was too ragged and gaping for any putty.

Lord Trenchard has said that all land battles are confusion and muddle, and the job of the Air Force is to accentuate that confusion and muddle in the enemy's army to a point when it gets beyond the capacity of anyone to control. This is exactly what it did to the German Army in Italy in the critical last days of May and first days of June: roads were cratered and blocked by destroyed vehicles, telecommunications were cut, villages became a mass of rubble barring through movement, local reserves



could not be moved because there was no petrol available, forward troops were out of ammunition and out of touch with their controlling headquarters, nobody knew for certain where anyone else was, and the troops were hungry, thirsty, tired and demoralized by constant attack from the air. Above all, perhaps, the enemy was deprived, by the impossibility of rapid and coherent movement, of that tactical flexibility which has always been such an admirable quality in German defensive fighting—his ability to pick up a battalion here, the contents of a leave train there, a machine gun *abteilung* from one division and a couple of batteries from another, and fling them in as an improvised battle-group to save a local situation. The surprising thing is, in the circumstances, that the remains of the shattered divisions were able to disengage at all or to preserve any sort of entity as units. It speaks volumes for the discipline and fighting qualities of the German soldier that they were able to do so even to the limited extent that they were.

In point of fact, the divisions that were engaged in the battle South of Rome have, in varying degree but in the aggregate to a very large extent, ceased to exist as first line divisions. Full details of the enemy's losses in heavy equipment are not yet known. But it is known that he was able to extricate only a fraction of his tanks and heavier natures of artillery. His disastrous losses in M.T., amounting to hundreds a day during the crisis of the battle, were such that we know only the most vital supplies—fuel and ammunition, were allowed to be transported, and he cannot possibly have been able to get away more than a small proportion of his stores and heavy equipment. Even if his M.T. had not been decimated and his road communications dislocated to the extent that they were, no army can advance or withdraw without the extensive use of railways for the carriage of the mass of heavy equipment which they must have if they are to remain an army worthy of the name. No appreciable rail movement from the front back to the Pisa-Florence-Rimini area has taken place for weeks. Thus, while it is perhaps rash to end a paper of this sort on a note of prophecy, it is difficult to see how Kesselring's forces can make a stand on the Pisa-Rimini line of a type to necessitate a staged assault on our part without drawing on reserves of tanks, artillery and other heavy equipment which the enemy can ill afford to spare from other fronts in present circumstances. The moral is that we should continue to exploit the peculiar qualities of the air as the weapon of pursuit, to give the enemy no respite or opportunity to build up stocks of ammunition, fuel and equipment, and thus maintain the impetus of the Army's advance over the Appennines and into the valley of the Po.

#### THE CAMPAIGN IN NORTHERN FRANCE

There the contemporary note finishes. But when these words were written about the Allied offensive in Italy, a far greater and more decisive campaign had just opened in Northern France. After a short three months offensive by the strategic air forces, which had to all intents and purposes paralysed the vital rail communications behind the German Armies in France and the Low Countries, the Allied Armies had landed in Normandy under a scale of air support which would have been unbelievable a few years earlier. Within a couple of months the words quoted above about the fate of the enemy Tenth and Fourteenth Armies in the hills South-East of Rome were to prove even more true of their Fifth and Seventh Armies, West of the Seine. I think it is worth quoting some extracts from interviews with enemy Commanders, taken from Major Shulman's excellent book, *Defeat in the West*, which throw a lurid light on the effect in a land campaign of air superiority in a degree to which it was enjoyed by the Allies in 1944—a state of affairs which some of the recently published despatches show a tendency to take rather too much for granted.

Here, for instance, is Bayerlein, the commander of the Panzer Lehr Division describing his experiences on D-day: "At two o'clock in the morning of 6th June I was alerted. The invasion fleet was coming across the Channel. I was told to begin moving North that afternoon at 5 o'clock. This was too early. Air attacks had been severe in daylight and everyone knew everything that could fly would support the invasion. My request for a delay till twilight was refused. We moved as ordered and immediately came under an air attack. I lost twenty or thirty vehicles by night-fall... we kept on during the night with but three hours' delay for rest and refuelling. At daylight General Dollman, commander of the Seventh Army, gave me a direct order to proceed and there was nothing else to do. The first air attack came about half-past five that morning near Falaise. By noon it was terrible. My men were calling the main road from Vire to Beny-Bocage a fighter-bomber racecourse... Every vehicle was covered with tree-branches and moved along hedges and the edges of woods. Road junctions were bombed and a bridge knocked out at Conde. This did not stop my tanks but it hampered other vehicles. By the end of the day I had lost forty tank trucks carrying fuel and ninety others. Five of my tanks were knocked out and eighty-four half tracks, prime movers and self-propelled guns. These were serious losses for a division not yet in action."

The following day the 17th S.S. Panzer Grenadier Division started from Thouars, South of the Loire, to go to the beach-head. It took five days to do the journey of 200 miles. Here is an account by a staff officer of that Division: "Our motorized columns were coiling along the road towards the invasion beaches. Then something happened that left us in a daze. Spurts of fire flicked along the column and splashes of dust staccatoed the road. Everyone was piling out of the vehicles and scuttling for the neighbouring fields. Several vehicles were already in flames. This attack ceased as suddenly as it had crashed upon us fifteen minutes before. The men started drifting back to the column again, pale and shaky and wondering how they had survived this fiery rain of bullets. This had been our first experience with the fighter-bombers. The march column was now completely disrupted and every man was on his own, to pull out of this blazing column as best he could. And it was none too soon because an hour later the whole thing started all over again, only much worse this time. When this attack was over the length of the road was strewn with splintered anti-tank guns (the pride of our division), flaming motors, and charred implements of war. The march was called off and all vehicles that were left were hidden in the dense bushes or in barns..."

Major Shulman describes how another Panzer division left Abbeville by rail two days after the 17th S.S. P.G. Division left Thouars: "The locomotives were hit so many times by Allied fighter-bombers that the tanks finally had to finish the journey by road. It was not until 18th June that 80 of the 120 tanks that originally started limped into the line about Caumont, having taken almost ten days to travel about 300 miles." Day after day this went on. Two months later, in the battle of Mortain, the 2nd Panzer Division took part in the attack. "We made a swift advance of about ten miles and suffered only three tank losses," says its commander—Von Luttwitz, "116 Panzer Division, our left-hand neighbour, made only limited progress. The morning of 7th August had dawned bright and clear. It was a perfect flying day. Suddenly the Allied fighter-bombers swooped out of the sky. They came down in hundreds, firing their rockets at the concentrated tanks and vehicles. We could do nothing against them and we could make no further progress. The next day the planes came down again. We were forced to give up the ground we had gained, and by 9th August the Division was back where it started from, North of Mortain, having lost 30 tanks and 800 men."

The history of those months teems with examples of how this paralysis of movement by road was equalled on the railways. Says Schwalbe, commander of the 344th Infantry Division: "On 3rd August my division of about 8,000 men was finally told to move to Normandy . . . our destination was Falaise. I decided that, since speed was essential, my fighting troops would travel from Amiens to Rouen by train, while my supply troops would make a three-day journey on foot by road. I expected that the fighting element of the Division would reach Rouen, about 120 kilometres away, in about 24 hours." Incidentally this just shows not only how shockingly badly informed were senior German commanders about what was going on on other parts of their own front, but also how completely ignorant they were of the potentialities of air power. Schwalbe goes on, "The first of the twenty-eight trains carrying my Division was derailed South of Amiens and as a result the men were sent by a long circuitous route to Rouen. They were shunted round France for days on end and it took them no less than nine days to make this 120-kilometre journey by rail. By the time they arrived and were ready to move off again, the battle for Falaise was lost and the retreat of the Seventh Army had begun."

From the ruck of political Generals and promoted S.S. gangsters who mishandled the German armies in the West during the campaign of 1944, one man stands out as a professional soldier of the very highest order. Field-Marshal von Rundstedt had no delusions about what it was that sealed the doom of German resistance in France. In his 1947 Lees Knowles lectures at Cambridge on "Air Power in Modern War," which should be studied by all serious students of the subject, Marshal of the Royal Air Force Lord Tedder quotes these words of the German Commander-in-Chief: "It was all a question of Air Force, Air Force and again Air Force"; or more calmly, "The main difficulties which arose for us at the time of the invasion were the systematic preparations by your Air Force; the smashing of the main lines of communications, particularly the railway junctions. We had prepared for various eventualities that all came to nothing or were rendered impossible by the destruction of railway communications, railway stations, etc. The second thing was the attack on the roads, on marching columns, etc., so that it was impossible to move anyone at all by day, whether a column or an individual, that is to say to carry fuel or ammunition. That also meant that the bringing up of the armoured divisions was also out of the question—quite impossible. And the third thing was this carpet bombing . . . Those were the main things which caused the general collapse."

Says Lord Tedder, commenting on this, "The pendulum had indeed swung over since the *Wehrmacht* had swept across France four years earlier."



## MOTOR TRANSPORT

By COLONEL L. D. GRAND, C.I.E., C.B.E.

THE coming of peace, slow though it may be, heralds many familiar happenings in Army life. We have had the usual rise in pay that as usual is not what it is made out to be. But then it never is! The first rise after the 1914-18 War cost me 2d. a day, as they increased ordinary pay and cut Corps pay. The recent effort has, of course, been based on the same Treasury file. Then we have run into the usual grim period where N.C.O's have one year's service and few officers know the true beauty of Regulations. With what delight did one observe those who really studied Regulations, using them to do, or to refuse to do, anything the whim of the student suggested.

There are many other normal peace-time phases that will come upon us. One that we may expect in the near future (as in 1922 and again in 1936) is the M.T. crisis. Due to our having so sadly thrown away the horse as a means of transport of men and goods, we have been forced to employ the motor vehicle. Naturally, we tend to consider motors much as we considered horses, for, after all, do the two not perform the same function with advantages to the horse as a means of recreation and to the motor as regards speed and carrying capacity? Unfortunately the difference is more profound, for the motor does not breed and cannot continue to function without a limitless supply of spare parts. Hence, all too late, we find that the comfort in administration we had grown to expect from horsed transport—merely a matter of producing food and a small percentage of new entries to replace animals found unfit for polo—has vanished. The horse, once provided and fed, went on working day in, day out, subject to good horse-management. The lorry must have petrol and oil and spares *ad lib* and even then will not go on working as did the horse, but wears out, and demands vast workshops, and even then ceases to be efficient.

And thus we get the crisis. The Treasury give us a nice piece of money to buy lorries and sit back satisfied. We are faced with ration fetching, store carrying, training over big distances and so on and, having used our nice new lorries for what seems a very short time, suddenly find out they won't go—there are 50 per cent. in workshops—and the Army is immobile. How fanciful! But it happened just like that in 1936 in Egypt and it happened again in 1942 on the Imphal road. In the first case—1936, the Army was existing on patched-up old lorries and cars which filled quite nice-sized establishments. As a result of the Abyssinian crisis the G.O.C. Egypt decided to get down to real training in the desert. In three months the force was immobile, for all the remaining life of the vehicles had been expended on training and nothing remained but crowded workshops and junk yards. In the second case the 4th Corps was operating on a 250-mile road line of communications (Manipur road-Tamu). There was always a shortage of lorries, no matter how many were sent up from the Army. Rude telegrams passed, finally implying that one side could not count and the other side were deliberately not despatching the numbers alleged. The argument became so heated that recourse was made to arithmetic and the ugly facts were laid bare. One round trip was 500 miles. One new lorry could be relied on to do 15,000 miles before requiring a new engine, after which it did a further 10,000 before being B.L.R.<sup>1</sup> Hence, on an average, when a lorry had done thirty trips it went into workshops, and when it had done twenty more trips it was finished, anyway, locally. To put it another way, in the best possible conditions one lorry plus one new engine plus x man-hours of workshop capacity was required for every 125 tons

<sup>1</sup> "Beyond local repair"



moved up the road. And when accidents were added in and bulk considered, the figure was nearer 80 tons. There were nearly 100,000 men being fed and being supplied with clothing and ammunition, so the number of new lorries required daily can be worked out.

Now I wonder a number of things. How many really effective ton-miles of transport are there in the various Commands? The "effective ton-miles" are defined as the number of tons capacity the existing vehicles of the Command concerned can run, allowing for the existing workshop output, which also depends on the stock of spares and the current strength of trained mechanics. I wonder also how many effective ton-miles are required for the simplest and smallest operation. If we had those figures we should know how ready we are for war.

From this I wonder why we don't think of lorries along the lines not of horses but of ammunition. A G.O.C. would be issued with a stock of so many million ton-miles of lorry transport. This would be the number of capacity miles that remained in his transport. Then he would be put on a ration of so many ton-miles a month—a figure that would take into consideration the state of his transport, the spares available and the possible workshop output, and the number of new vehicles that could be allotted to his command. This ration would be sub-allotted—so much for chores, so much for training, so much for amusement and so on. In this way at any moment the true readiness for a particular operation would be apparent, for operational plans would have to be translated into requests for effective ton-miles as well as requirements for men and ammunition. Equally, the War Office or higher formation would know how many ton-miles a month would have to be put into a command before an operation was possible.

Now, effective ton-miles will, of course, have to be translated by the staff, for it is the summation of a myriad of factors. The bald figures of  $x,000,000$  e.t.m. available will, in fact, mean:  $a$  three-tonners who have still 20,000 miles useful life in them, plus  $b \times 15,000$  miles; plus  $c \times 10,000$  miles; plus  $d \times 5,000$  miles; total,  $z$  ton-miles plus spares for  $z$  lorry miles, plus so many square feet of R.E.M.E. workshop space manned by the correct number of fitters. Then it will mean gallons of petrol and gallons of lubricants of various categories and the staff to distribute them.

This all sounds complicated and indeed it is not required to be examined by the commander, who is concerned with the big figure—the e.t.m. available at any moment to use in the task he may have to undertake. No other way will give a true and clear picture of readiness for war, for mere numbers of lorries are useless unless one knows how many miles they can continue to run. And even then the approximate life remaining is a false figure if it does not cater for the spares position, the workshop position and the fuel position.

Hence let us hope that the coming M.T. crisis may be watched by e.t.m. calculations and e.t.m. rationing. In this way commanders and the War Office will be under no delusions as to the true state of the Army. Further, commanders at all levels will be encouraged to make the best possible use of the ration allowed. At the moment, if a unit achieves 15 per cent. use of its transport it is remarkable—that is, if a unit has ten 3-ton lorries it has a potential of  $30 \text{ tons} \times 50 \text{ miles a day} = 1,500$  ton-miles. With normal working it will, in fact, be lucky if it does carry on an average  $22\frac{1}{2}$  tons ten miles daily, i.e., 225 ton-miles a day.

Proper use of M.T., is however, another story and all that will be said here is that in one period in the War, a civilian transport expert, who was found as an officer, raised the output of 350 lorries from  $3\frac{1}{2}$  trips a day average to  $7\frac{1}{2}$  a day average, which shows what can be done.

## ADMINISTRATION AND TRAINING

### THE COMPANY COMMANDER'S PROBLEM

By MAJOR R. C. W. THOMAS, O.B.E., THE ROYAL WEST KENT REGIMENT

**I**T is generally accepted in the Army that, in peace-time, the efficiency of a field force unit as a fighting force is assessed by the standard of its administration. It is only natural therefore for most commanders to devote a considerable amount of their time, and that of their officers and N.C.O's, in striving to obtain a high standard of unit administration. Unfortunately this can only be done at the expense of the time available for training for active operations.

The present economic situation of the country greatly enhances the importance of efficient administration, and this situation seems likely to obtain for some years to come. The problem therefore is to find means to prevent time from being so fully occupied with administration that there is insufficient left for the much more important matter of unit training.

In order to examine this question it is necessary to appreciate the differing conditions that prevail in peace and in war, as far as they affect unit administration. In war, administration is simplified with the object of providing the unit, and the men, with all those items of equipment and personal necessities that are required to maintain the unit in the field. It follows that regulations, and the time spent on administration, are reduced to a minimum, allowing all ranks to devote their whole time to making themselves fit to carry out their role, and leaving the question of efficiency to be judged by their achievements.

In peace-time the position is very different. A unit has little opportunity to show its capabilities in the field, and therefore the tendency arises to measure efficiency by the administrative organization of the unit. It is unfortunate that in peace-time, administration must be controlled by a large number of regulations in order to ensure that the Army is economically operated and that the resources placed at its disposal by the Nation are not wasted. Therefore it is easy to understand that, in order to comply with the regulations, all ranks find themselves having to spend a considerable part of every day on administration, with the inevitable risk that thereby training for active operations will suffer.

### THE TIME FACTOR

Let us consider this question in relation to the time factor, taking the infantry battalion as a general example. In such a unit it is the company commander who probably has the greatest difficulty in finding time to carry out all his duties, for the following reasons:—

- (a) He is the officer with the closest contact to the soldier.
- (b) He is responsible for the practical training of his men, and must therefore find the time to acquire personal knowledge of what is instructed, as well as the time to supervise the actual instruction.
- (c) He is most concerned with the practical side of administration because on him falls the responsibility of actually implementing the administrative regulations.

### DISADVANTAGES OF DECENTRALIZATION

It is a well-known fact that most officers in command of troops aim to decentralize as much as possible of their administrative responsibilities, in order to allow themselves to concentrate on training their men. In theory, this method should be

possible, but in the Army of to-day, owing to the constant changes of personnel that seem to be never-ending, most company commanders find it impossible to maintain any administrative continuity if they decentralize their responsibilities to any marked degree. Consequently a tendency soon arises for the company commander to become a one-man band in his company, soon immersed in a thousand small details, usually on administrative matters, which force him to spend more and more of his time in the office instead of supervising the training of his men.

It is not only the civilian business executive who finds himself harassed by controls and regulations dictated by our present economic situation. The company commander is equally beset by many new administrative problems created by the same cause. He is required to deal with ration cards, soap coupons, sweet coupons and clothing coupons. He must enforce drastic economies to conserve petrol, clothing, equipment, rations, stationery, fuel, and nearly every other item required by his men. At the same time staffs are evolving almost every day new methods for carrying out the normal Army routine, and each and every one of these regulations, restrictions and innovations ultimately reaches the company commander, requiring him to carry out more checking, to prepare more ledgers and documents, and often completely to reorganize some administrative procedure in order to conform to the new instructions. The final result is not difficult to guess. The company commander knows full well that in peace-time there is little real danger of him being caught out in the field on training, whereas any suggestion of administrative weakness may well cost him his appointment. Therefore it is natural, and he is only human, if he allows himself to spend more and more of his time trying to safeguard his administrative reputation at the expense of time he should spend training his men for operations in the field.

#### THE DEMANDS OF OFFICE WORK

As a matter of interest, an attempt is made here to calculate how much time a company commander might spend on administration and office work during any one week. The week is considered to be five full working days of eight hours each and one half-day of four hours, both times being exclusive of breaks for meals. The time sheet is given below, and the position speaks for itself in that it suggests that the company commander can easily spend three-quarters of his week on administrative and office work, leaving only one quarter of the week for training his men.

##### *Battalion Duties*

C.O's conferences and orders ...	1 hour
Officers instructional period ...	1 hour
C.O's inspections and parades ...	1 hour
Courts of inquiry, courts martial duties, lectures, demonstrations, audit boards, fire practice, Field Officer of Week, battalion departmental duties, etc. ...	6 hours

##### *Company Administration*

Daily morning parade, inspection of men, accommodation (20 minutes a day) ...	2 hours
Company drill parade and arms inspection (one a week) ...	1 hour
Pay parade and collection of stoppages ...	1 hour
Miscellaneous inspections of C.Q.M.S. stores, ledgers, weapons, equipment, ammunition, men's kits, barrack damages, etc. ...	3 hours



*Company Office*

Daily orders and interviews (10 minutes a day) ... ..	1 hour
Company correspondence (1 hour a day) ... ..	6 hours
Checking all company accounts ... ..	1 hour
Training records, testimonials and release documents ... ..	1 hour
Preparation of training programme, training arrangements, and briefing instructions ... ..	2½ hours
Weekly conference of officers and N.C.O's ... ..	½ hour

*Miscellaneous*

Padre's hour ... ..	1 hour
Physical training, games and cross-country runs ... ..	4 hours

*Summary*

Hours available in week ... ..	44
Hours spent on administration ... ..	33
Hours available for training ... ..	11

It is agreed that the example given above can be criticized on the grounds that not every commander may feel it is necessary to be so personally thorough in his administrative work. However, it is submitted that the conclusion reached is not altogether exaggerated. This conclusion suggests that the time has now come when once again some new effort must be made to overhaul the administrative responsibility that now falls on the company commander or his equivalent in other units.

## CENTRALIZATION THE SOLUTION

Could not this administrative problem in lower formations be solved by establishing a system of centralization, as opposed to decentralization? All major units should be allowed a centralized staff to deal with the major administrative matters, operating in the following manner:

*Clothing.*—The present issue system to be abolished. Every man to be given a complete outfit of clothing on joining the Army, and thereafter made personally responsible for keeping it to the correct scale. The Quartermaster branch of a unit should function on a shop basis, where a man can either exchange unserviceable clothing over the counter as an individual, or make cash purchases to make up losses. Such a procedure would abolish the endless number of kit inspections now necessary, and the complicated system of documentation to replace items of clothing that has to be undertaken by as many as six different offices in a major unit. At the same time, such a system could not fail to give a better service to the man as an individual.

*Pay.*—Field units should have a small expert pay staff in order to allow all pay matters to be dealt with centrally. This office would be responsible for keeping the accounts of all personnel, for payments, and for dealing with pay queries. At the same time men should be permitted to deal direct with this pay office as individuals. Once again the system could not fail to give an improved service to the man as well as relieving company commanders of an enormous amount of work.

*Documents.*—As in the case of pay, all personal documents of men in a field unit should be centralized in one office. This office should function on a library



system and be responsible for the safe custody of all documents, and for preparing items for publication to Record Offices from information supplied to them by company commanders. Such a system was adopted during the War in many Infantry Training Centres and proved an outstanding success, in that the staffs became experts in looking after documents and gave better service to the unit, besides relieving company commanders of a great deal of work.

#### CONCLUSION

The suggestions made above would obviously necessitate a considerable reorganization of the present administrative procedure in the Army, but it is submitted that innovations on these lines are most urgently needed if the modern Army is to become a highly trained body of men fit to fight anywhere under any conditions, which is the declared future role. This is an inspiring ideal, but it is difficult to see how commanders can be expected to find the time to train themselves and their men for such a role when so much of their time and energy has to be expended in peacetime on general administration.

## A CONJURER JOINS THE STAFF

By LIEUT.-COLONEL C. C. R. MURPHY

ONE November morning in 1914, a group of us were sitting in the saloon of a troopship lying in the Shatt-al-Arab, having been sent aboard with minor ailments after the battle of Zain—as the Turks call it—that delivered Basra into British hands. Suddenly the Captain poked his head round the corner and enquired whether we had all paid our mess bills. One of the party replied that he had not done so; he declared that he had neither cash nor cheque book with him; he was sorry, but could do nothing about it. Another offered to lend him the money, and thrusting his hand into his pocket, produced five golden sovereigns which he threw on the table. The man sitting next to me picked them up casually as if to examine them. One by one they disappeared, and the next moment they were back again. This happened two or three times, and finally he produced them all from one of my own pockets. I had been watching him closely. His sleight of hand was really first-rate. Here was the man I was looking for.

At the end of a couple of days we were all allowed to return to our units. Before we dispersed, however, I spoke to the Wizard, as I shall now call him, about his conjuring. He told me that he belonged to the Magic Circle and that once, when on leave from India, he had obtained a contract from one of the leading music halls in London where, under an assumed name, he gave exhibitions for weeks on end. On hearing this, I enquired whether he would care to take on the job of Field Censor; if so, I would ask the Force Commander for his approval.

The Wizard having accepted my offer, I lost no time in seeing the Force Commander. I pleaded that my Intelligence work was very heavy, and that I should be glad of someone to take the duties of Chief Field Censor off my hands. I asked specially for the services of the Wizard for this appointment, without of course disclosing my reasons. The Force Commander agreed, and the next day the Wizard joined his staff.

Shortly afterwards, he and I were driving into Old Basra—the home of Sindbad the Sailor. As we bumped along over the pot-holes in a rickety *arabiya*, we passed an Arab who was sitting in the doorway of his shop fingering his beads. As soon as he saw us he jumped to his feet and, looking intently at the Wizard, made a low salaam. Noticing that there was something in the wind, I asked the Wizard who his friend was, and he confessed. He said he had gone into the shop one day to buy some articles for the Mess and, knowing no Arabic, was relieved to find that the shopkeeper could speak a little Urdu which he had picked up during his visits to Bombay. In too great a hurry to make his fortune, he wanted to charge the Wizard twenty rupees for his purchases. The latter expostulated, saying he did not know the right price himself and so he would ask Allah to settle the dispute. Maintaining an air of mock reverence, he handed the shopkeeper the full amount of twenty rupees, asking him at the same time for the loan of a bowl. The shopkeeper was told to count the rupees, put them on the table, and cover them over with the bowl. This done, the Wizard muttered some hocus-pocus, lifted up the bowl, and asked the shopkeeper to count the rupees again. There were now only twelve. "*Ma'shallah*," exclaimed the astonished merchant, as he counted the coins first into one hand and then the other. After eyeing him searchingly for a few moments, the Wizard said: "I am a thought-reader. You were trying to cheat me. Take your twenty rupees, but let this be a lesson to you for your greed." The shopkeeper was so abashed that no power on

earth would have induced him to accept one pie more than twelve rupees. It looked as though my scheme was going to work well.

In short, the Wizard did very little censoring. He could not speak a word of Arabic; but he had the complete stock-in-trade of the illusionist. Knowing the awe with which magic is regarded by the Arabs, I used to send him round amongst the shaikhs and notables of Basra and Zubair with a pack of cards and a bagful of rupees, with instructions to entertain them with his tricks. His fame spread like wildfire. I took especial care that my own spies, and also the Shaikh of Zubair, should be made acquainted with his magical powers.

One of my assistants could decipher the cuneiform inscriptions that had been fashioned on the so-called Babylonian "bricks" in the far-off Days of Ignorance; but compared with magic they thought little of such a gift. "Wellah," they cried, "any learned man might do the like; but what would all his learning avail him in discovering the thoughts of another, or in shaking rupees from a poor man's beard?"

Early in February, 1915, our spies brought in the news that a powerful enemy force was advancing down the Euphrates and had already reached a place called Nasiriya. Obviously, the first objective of this force was the recapture of Basra, and the immediate aim of the opposing commanders would be the establishment of a system of espionage in each other's camps. The more widely, therefore, the fame of the Wizard could be spread among the townsfolk of Basra, the less likely would they be to harbour enemies.

I used to pay large sums of money to our spies, especially to one named Farhan. I knew this man was also in the pay of the Turks, but felt that we could make better use of him than they could. Moreover, the double game he was playing would facilitate his movements between the camps. When he returned from his first visit to the enemy's advanced position on the Euphrates he told me that there were many Turks there—red-faced men of outlandish speech he could not understand. He said that according to an Arab in the camp, these Turks were employed in their own country in putting out fires—a casual remark disclosing the important fact that they belonged to the Constantinople Fire Brigade, the best troops in the Turkish Army. Farhan also reported the presence of some *fidais*; these are bands of Immortals, willing to sacrifice themselves for Turkey and Islam or, less romantically, hired assassins. The Turkish Commander himself was one of these desperate characters.

The situation having now become serious, I sent Farhan back post-haste to try and ascertain the strength of the Turkish troops and number and size of their guns. After an anxious ten days he came back with the report that there were three thousand Turks in the camp, with a score of guns. As to size, he said he could almost put his clasped hands into the mouths of two of them, but the others were smaller and fired shells about the size of the sugar-loaves on sale in the Basra shops. Altogether a most valuable report.

Meanwhile the work of the Wizard went steadily on, and his reputation increased daily. Our spies became very active, whilst Arabs came trickling into Headquarters with scraps of information and—save the mark—gifts of all kinds for the Wizard! They brought him pearls from Bahrain, *abas* from Baghdad, quaint silverware from Amara, prayer-rugs from Persia, and even boxes of the much-coveted *awaydi* dates from Basra itself; but all were sternly refused.

There were other straws to show the wind; for instance, one day an Arab came in of his own free will and volunteered the news that a spy was hiding in a house in Basra near the Serai. This man, declared my informant, pretended to be engaged in

making date-boxes : actually, however, he was a Turkish officer from the enemy's camp. This report turned out to be perfectly true, and the spy was caught.

Not long afterwards, the Shaikh of Zubair came in to see me, having ridden in on a mule all the way from his little desert town that he might deliver personally some important news. He told me that during the night he had received a visit from Ajaimi, the notorious Muntafik shaikh with a large following, who had said that the Turks were making ready for battle and that *insha'llah* the unbelievers would be scattered. Ajaimi had asked him point blank whether he was going to throw in his lot with the Turks, but Shaikh Ibrahim declared that he had made no reply.\* Here I interrupted him with the question : " Why were you in such a hurry to come and tell me all this at such inconvenience to yourself ? "

Evading the question, he went on to say that although Ajaimi had sworn allegiance to the Turks he would in the end do nothing. Later in the conversation, Shaikh Ibrahim mentioned that a British officer had paid him a visit one day in Zubair and had performed some astonishing feats of magic. " It is better," he added shrewdly after a pause, " that you should hear this news from me than from another."

Early in April the clash came. For two days the battle swayed in the balance, but on the third day the Turks broke and fled across the desert. Ajaimi with his Arab hordes hung about the flanks till the fighting was over, and then began looting the vanquished. A different result of this touch-and-go Battle of Shaiba would have involved some re-writing of history.

What influences had been at work, we can but conjecture. In the end, the co-operation of the *mujahidin*, upon which everything depended, was not forthcoming ; this alone averted disaster.

The Force Commander, who knew nothing at all of the wider activities of the Field Censor, received his baton from the King when the war was over, and a few years later died, little dreaming that he was the first General in history to have employed a conjurer on his staff.

---

\* The Turkish Commander in the field confirmed this in a conversation with the writer in Constantinople after the Armistice.



## R.U.S. MUSEUM

By THE SECRETARY

**T**HE Museum has acquired some more mementoes and relics of the late war of particular interest.

Field-Marshal the Viscount Wavell has kindly lent the car flags used by him and representing the whole period of his command as G.O.C.-in-C., Middle East, as C.-in-C. Middle East, as C.-in-C. India, and as Supreme Commander A.B.D.A. (American British, Dutch, Australian) Command.

A home-made Union Flag, painted on a prison-issue sheet, is believed to be the first hoisted in Japan after the capitulation on 15th August. It was made by British Prisoners of War in Camp No. 10.D in the Sendai area. When, on 19th August, the Japanese Camp authorities were informed of the capitulation, the Camp and village were taken over by the Allied prisoners. On the 21st, this Union Flag, was raised with all due ceremony and flown in full view of the village and main line railway until the Camp was evacuated. The U.S. Flag was raised by the American Prisoners of War at the same time. It was not until nine days later that the first Allied forces landed; and it was the 30th of the month before the American Flag was hoisted in Tokyo. This Union Flag has been given by Major F. H. Frankcom, R.A.S.C., who was in the Camp.

Some small specimens, provided by Group Captain A. E. Dark, R.A.F., show the effects of "flashburn" caused by the atomic bombs dropped on Hiroshima and Nagasaki. They illustrate the intense heat radiated by the energy created when the bomb explodes.

Brigadier J. S. Blunt, R.A., has lent a large collection of German model soldiers. These are made in plastic, but are very well finished; the figures of Hitler, Goering and Mussolini are particularly lifelike. In variety, character and imagination, these model soldiers challenge anything so far produced in this Country.

An interesting addition to our collection of ships' badges is that of H.M. Sloop "Starling." This ship was commanded by the late Captain F. J. Walker, R.N., as Senior Officer, 2nd Support Group, Western Approaches—one of the most distinguished leaders in the anti-U-boat war in the Atlantic. The "Starling" was responsible for the destruction of fourteen U-boats, including six in a single operation lasting twenty days. The badge, as officially designed, was "a starling grasping in its beak a worm all proper," but in that adopted a U-boat has been substituted for the worm. It has been given by Commander M. L. Hardie, R.N.—her present captain.

A set of coloured picture-diagrams, supplied by the Admiralty, show strikingly the methods adopted by naval aircraft in attacking U-boats. They make an interesting and attractive addition to the section devoted to Naval Aviation.

The general public seem to be much attracted by the exhibits displayed in the windows in Whitehall, on the road-level of the Museum. These are changed frequently, and whenever possible a relic or picture illustrating some notable anniversary or Service occasion is shown; during Easter this took the form of some of the equipment of one of his sledges and a portrait of Captain Robert Falcon Scott, R.N.—the great Antarctic Explorer. It will be recalled that the last entry in his diary was dated 29th March, 1912.



## THE SUPPLY ROAD TO RUSSIA

By "SATHI"

MUCH has been said about the help provided by the Allies to Russia during the late war in the form of vast supplies sent by the northerly sea route—the so-called Russian Convoys, which were in fact British and American ; but little has been heard of the land line of communication—the 3,000 mile road built from North-West India through Persia, via Zahidan and Meshed, into South Russia ; yet one-and-a-half million tons of stores were poured along this highway at a time when it is doubtful whether shipping could have been made available to carry this additional load. The pamphlet on *India and the War 1939-45* records "A 24-hour continuous military convoy service was maintained on the road—a road which ran through country varying from burning desert to icy mountain passes." These bare facts, however, need amplification in order to provide an adequate picture of this other great effort to help our war-time Ally and to give some idea of the difficulties which had to be overcome. It is regretted that the writer has now no access to official records, and the story is compiled largely from memory, so that certain dates and data are approximate only.

The Zahidan Area, as it was afterwards named, was a Sapper preserve at first with a C.R.E. stationed at Zahidan assisted by a number of Sapper officers. Later a Station Staff Officer was posted to assist with administrative work, and eventually an Area Commander with a small staff was appointed in June, 1943.

The area comprised the country of East Persia lying East of a line joining Meshed-Kerman to where the 60th degree of Longitude cuts the southern coast, the eastern boundaries being Afghanistan and British Baluchistan. It also included the Chagai Agency in British Baluchistan. It was roughly 800 miles from North to South and about the same distance from East to West (see Map).

When we occupied the country in 1941 it all came under Paiforce for administration, but in 1942 India took over the area, and it was in that year that the road was completed.

The Headquarters of the area was at Zahidan—formerly called Duzdab. The latter name, which means "Thieves water" in Persian, was not considered quite appropriate by the late Shah, so it was changed to Zahidan which is the name of one of the pre-Moslem cities of East Persia, of which now only the ruins remain.

The town of Zahidan developed from a very small village during the 1914-18 War. It is the terminus of the broad-gauge railway from India, built at that date. There is still a large number of Indian traders and shopkeepers there. During that war it was the base for the East Persian Cordon, which controlled pretty much the same country as that included in Zahidan area.

The road runs from Quetta through Dalbindin and crosses the Persian border near Mirjawa. It then goes through Zahidan which is about 54 miles from the border. After leaving Zahidan it traverses the Hormuk Pass—a dangerous defile for two reasons. It is only a few miles from the Afghan border and raiders frequently crossed over and held up traffic on the road, which was inadequately guarded by our Persian Allies. For important convoys and V.I.P.'s a British escort was superimposed on the Persian guards under orders of the Area Commander, close liaison being maintained with the local Persian Commander. The other reason why it was dangerous was that in rainy weather the roadway in the defile was liable to be washed away. After

passing through the villages of Safed Aba and Shusp and stretches of desert, the road reaches Birjand, and then turning North climbs another pass over a high mountain range, then traverses desert again until within about 70 miles of Meshed, where it enters a greener and cooler land. From Meshed it is only about 150 miles to Askabad—the terminus of the railway inside the Russian border.

The section of the road between Meshed and Russia was maintained by Russian engineers; South of Meshed its maintenance was a British responsibility. The original camel track which already existed was broadened and made fit for light motor traffic during the 1914-18 War, but it was necessary to re-align the road in 1941 and 1942 to take modern heavy lorries. The road from Quetta to Dalbindin (221 miles) is metalled and tarred, but after that, all the way to the Russian border, it is a "shingle" road, fine shingle being raked on it regularly by Baluch and Persian labourers. There was roughly one labourer per kilometre. These usually worked in small parties of about six men, and could be moved by lorry for essential repairs elsewhere on the road.

In spite of the heavy traffic on it, the road was always kept in good trim. Our Sappers are to be congratulated on their share in its construction and maintenance. They were assisted by a Danish engineering firm—Consortium Kamsax, which engaged labour and fixed contracts and was generally responsible for all works under R.E. supervision. Sappers not on out-station duties lived in their own comfortable Mess in Zahidan. Many officers and officials living in Zahidan or passing through have happy memories of this Mess.

In addition to the Meshed road, our Sappers constructed one to Kerman. This was an old track and required little realignment except where it was entirely obliterated by sand in a desert area. They also constructed three airfields, the one at Zahidan being particularly well made with a concrete runway; the second was at Mirjawa close to the Perso-Indian border; and the third airfield was at Kerman.

The India Office pamphlet quoted earlier is somewhat misleading as regards distances, the 3,000 miles of road mentioned in it included local roads to airfields and camps.

The following table shows the approximate mileage from Zahidan :—

Meshed	625	Mirjawa	54	Askabad	775
Birjand	310	Dalbindin	233	(Russian railway base)	
Kerman	320	Quetta	454		

From the Russian border to Quetta by this route is slightly over 1,200 miles. It is worth noting that the vulnerability of Pakistan to invasion would appear to have been increased by the construction of this road.

The first attempt to transport stores to Russia was made with a scratch lot of old lorries collected from India, with Indian civilian drivers. It was soon found that this was not an economical proposition, so the services of the U.K.C.C. (United Kingdom Commercial Corporation) were obtained. This Corporation, which was State sponsored, established headquarters at Meshed with workshops and spares and a subsidiary establishment at Zahidan where there were also efficient workshops. A fleet of about a thousand modern American lorries was used and it was found that Persian drivers gave better results than Indians. The output was about 250 tons per day of such valuable items as tea, gunny (sacking in rolls) and other goods and minerals produced in India. The Persian drivers did the round trip to Meshed and back in about five days. At Meshed the Russians took over the goods for the run to Askabad on the Russian railway. Close liaison between the manager of the U.K.C.C.



and the Area Commander was essential, and escorts were supplied when necessary. The Persian drivers usually drove at 40 miles per hour or more, and preferred traveling at night in desert areas; they were good drivers and crashes were few. The military convoy system was not used. Small detachments of six to twelve lorries started at intervals from Zahidan, the drivers stopping for meals at *chae khanas* (tea houses) at various towns and villages en route.

The camp at Zahidan which was planned when the Germans had reached the Caucasus was a "dispersed" camp in order to minimize the danger from possible air attack. As it was spread out over such a large area it was somewhat difficult to organize. It was about two miles South of Zahidan town. Prefabricated hutting made in India was used. This was found unsatisfactory at first as the sand penetrated all cracks, but the Sappers overcame this by putting lath and plaster work inside the walls. A few Nissen huts were used for the hospital and Messes. These proved admirable for keeping out sand, and when the outer shell was plastered with two inches of clay and whitewashed they were not unduly hot in spite of a maximum shade temperature of 110°. The climate was intensely dry for eight months of the year.

All water had to be pumped from 70 feet underground. It was definitely brackish and, when sent to India periodically for analysis, was invariably designated "Unfit for human consumption." In spite of this the garrison thrived on it, but to make drinkable tea the local stationmaster brought a tanker of water twice a week from a station sixty miles away where the water was good.

Although Zahidan was a Field Service Area it had no amenities in the shape of E.N.S.A. parties or a cinema. A cinema was eventually sanctioned, but shortly after completion of a large hall, orders were received to evacuate East Persia while the cinema machine was actually on the way from India.

Electric light was produced by the enterprising Sappers who found an old engine and a lot of scrap wire, and most of the buildings in the camp were electrified. Two swimming baths were also made by troop labour.

The station officers' Mess could accommodate up to twenty officers at a pinch. A good Persian cook was employed, and the Mess was a veritable oasis in the desert. There was not a blade of grass nor a tree within two miles of the camp, but this had its compensation in the entire absence of mosquitoes and malaria.

Supplies of fresh vegetables and meat arrived in the weekly train from Quetta, but the supply of vegetables was never sufficient and the medical authorities periodically ordered Vitamin C tablets to compensate. Kind friends in the Headquarters Staff at Quetta collected baskets of vegetables from their own gardens and sent them out—a gesture which was very much appreciated. Except for a few dried fruits and dates, no provisions could be bought in the local town. Sometimes an occasional fowl was discovered, but the cost of it was prohibitive. Persian wines and vodka were easily obtainable. Some of these wines were quite drinkable.

#### RELATIONS WITH FOREIGN NATIONALS

Certain contacts were made with Russian military and consular officers, more especially when Meshed was visited. There was a Russian representative at Zahidan who checked incoming goods from India and their safe despatch up country to Meshed. The writer had tea with the Russian Consul-General at Meshed, and some time afterwards attended a V.E. celebration in May, 1945, at the Russian Consulate there. The Russians proved admirable hosts and were most hospitable. Russians were also met and entertained at Zahidan when the locust "war" took place.

English and Russian anti-locust experts planned a campaign against the locust hatching grounds in southern Mekran. Ten small sprayer Russian aircraft called at Zahidan *en route* for the Mekran coast; but the experts picked the wrong places and not a locust was seen. Petrol had to be laid on and in some cases temporary landing grounds made for these aircraft. What amazed the Indians and Persians was the fact that in the midst of a life-and-death struggle with the Germans, the British and Russians should have taken on the locusts as well.

An "Iron Curtain" was in force beyond Meshed, and permission to proceed North for even eighteen miles to see the memorial to the poet Firdosi was not easy to obtain. There was a Russian post on the Meshed-Zahidan road about forty miles South of Meshed. All cars were stopped there and permits examined; there was also a small post about four miles out of Meshed where there was another examination. A sentry with a Tommy gun was always brought close up while the N.C.O. examined one's papers.

Cordial relations were established with the local Persian civil and military administration. The Governor of Persian Mekran and his wife lived in Zahidan and were most hospitable to the British officers. He spoke excellent English, having finished his education in England. Madame spoke excellent French.

Zahidan was a hotch-potch of nationalities. On one occasion when the writer dined at the house of a Norwegian, there were eight different countries represented.

Persian army officers were polite and co-operated, but did not mix freely with their British opposite numbers.

Persian authorities were entirely responsible for the maintenance of law and order in their own country, and in *no* case did this duty devolve upon the British forces except, as mentioned, in strengthening escorts for important convoys, and always for British V.I.P.'s.

The working class Persians in and near Zahidan were local tribesmen and not really representative of Persia, but they were good workmen and easy to manage; many of their tribal leaders had helped us in the 1914-18 War. There is a middle class element in the larger towns.

Banditry occurred from time to time, cars and lorries being held up and robbed. During 1944-45 the bandits shot up various vehicles (our Army vehicles were never molested), killing and wounding a number of people—all Persian nationals except one American officer who unfortunately lost the sight of one eye and a thumb. Favourite places for hold-ups were the Hormuk Pass, twenty miles North of Zahidan, and on the Zahidan-Kerman road, forty miles East of Kerman. The bandits were usually tribesmen, and very often deserters from the Persian Army. Because of bandits our Army vehicles always travelled armed, and always in pairs at least.

In 1943 arrangements were made with Russia to send a large convoy of essential goods and ammunition through Persia and Russia to China. In preparation for this convoy a staff of about a dozen Chinese officers and officials came to Zahidan. The convoy, in four hundred new Chevrolet 3-ton Lend-Lease vehicles, actually reached Zahidan from India in the early Autumn of 1943. This convoy was run by British officers with Indian Army drivers in a most efficient manner. At Zahidan it halted for some time to pick up more stores which came by rail from India. It was then sent up the road by detachments, one hundred lorries at two-day intervals, with orders to concentrate near Turbat-i-Haidari, a town on the last stage to Meshed. At Meshed it was to be handed over to the Russians for onward transit by rail from Askabad.

The convoy commander was in touch by wireless with Area Headquarters at Zahidan. While he was waiting at Turbat-i-Haidari, a message came through ordering the convoy to return to Zahidan preparatory to going back to India. This is the first authentic record of a "No" by Molotoff: he refused to allow the convoy through in spite of the fact that someone in authority in Russia had already given the necessary permission. At the time Molotoff's viewpoint was logical enough as Russia was not then at war with Japan.

The convoy returned to Zahidan and all the goods carried by it were sent by rail to India and eventually flown in to China over the "Hump."

Mention has been made of Consortium Kamsax—a Danish consulting engineering firm which co-operated with the Royal Engineers and built most of the roads, camps, and the airfields for us under a limited R.E. supervision, thus saving Engineer manpower at a critical time of shortage. A C.R.E. was stationed at Zahidan with a staff of ten to twelve R.E. officers. In the same building which housed the Royal Engineers Kamsax had their executive staff. Kamsax worked through various contractors; chief of these was a Norwegian and his Yugoslav partner. Such was the good work done by Kamsax that at the end of the War the managing director was awarded a decoration by H.M. Government.

#### CONCLUSION

British-Indian troops withdrew from East Persia on 22nd December, 1945, at very short notice, although preparations had been made to stay on until March, 1946—the time agreed upon with the Russians.

It is difficult now to see what the attraction of East Persia was. The knowledge that vital supplies to Russia were essential to the successful prosecution of the War helped the morale of all ranks, who saw that they were doing useful work. Equally useful work, no doubt, had been done in garrisoning the Indian frontier and other places in India; but one felt that India was remote from the war in the West, and aid to Russia was part of that struggle. It should be mentioned here that many officers and men serving in the Area were debarred from service in an operational area owing to age or low medical categories. Then there is the attraction of the desert. In spite of the heat and sandstorms in Summer and the intense cold and storms of Winter, the desert "pulls" most people who live in it for any length of time.

The greatest event was the visit of General Auchinleck and his personal staff in November, 1945. They arrived by air and stayed the night—a night which he and his staff, it is thought, will still remember.



## THE RIO AND BRUSSELS TREATIES

By J. M. SPAIGHT, C.B., C.B.E.

THE Anglo-French-Benelux Treaty signed at Brussels on 17th March, 1948, can best be annotated, so far as it relates to defence, by means of comparison with the Inter-American Treaty of Reciprocal Assistance, signed at Rio de Janeiro on 2nd September, 1947. The two treaties display a good deal of parallelism between their contents, both in the underlying ideas and in the manner in which those ideas are given concrete form. There are differences but these, too, are instructive. The chief of these is that Brussels is more in the tradition of the normal defensive alliance (apart, of course, from the economic provisions) than Rio is. That is natural, for it was conceived originally as an extension of the Anglo-French Treaty of Dunkirk, signed on 4th March, 1947, which provides for concerted action in the event of resurgence by Germany. Mr. Bevin's speech in the House of Commons on 22nd January, 1948, indicated that that was what he had in mind then, with the addition of clauses relating to co-operation in other fields as well. The Benelux Governments, it is understood, preferred a treaty which would cover aggression from any external quarter, not from Germany only. Nevertheless, on the whole the Brussels and Rio Treaties are essentially comparable. Each is a regional agreement within the terms of Articles 52-54 of the Charter of the United Nations. Each is an arrangement for collective self-defence within the meaning of Article 51. Brussels does for Western Europe substantially what Rio does for the Western Hemisphere. It organizes security on a local basis in contradistinction to the global basis of the Charter.

Why was a regional organization necessary? Why did not the general organization suffice? The two treaties *ought* not to have been necessary if the Charter had been, as it was expected to be, a comprehensive guarantee of World peace. The sad truth is that it was never such. It ran away from a difficulty and it made an unjustified assumption. It did not squarely face the danger of aggression by a Great Power, and it assumed that the five Great Powers—the United States, Britain, the Soviet Union, France and China, would be of one mind in all issues that really mattered. It had as its basic principle the unanimity of the five Powers. Only if they kept in step with one another could the new order have marched to success; and they did not keep step. One of them was determined from the first not to accommodate its stride to that of the rest. Russia was always, or nearly always, the defaulter. She was usually in a minority of one and, because of the existence of the veto, a minority of one was enough to upset the procession.

The natural result was that the other Powers began to look around for some means of escape from a situation which was becoming intolerable. Russia had created that situation, but the last thing which she desired was that an escape from it should be found, for a continuance of it suited her book. The howl of wrath which the negotiations at Brussels evoked in Moscow was the measure of the Kremlin's realization that the proposed pact was calculated to spoil the Soviet game. Yet the Western nations were only doing what Russia herself had already done. She had concluded treaties of mutual assistance with her limitrophe States, and, as Mr. Bevin had stated more than once, we were equally entitled to have good neighbours in our street: what was sauce for the Eastern goose was, in fact, no less sauce for the Western gander. The degree of longitude did not change its savour or palatability.

Alike under the Brussels and the Rio Treaties the support for which a participating State can look if attacked is more immediate and certain if the attack takes place



within a region defined in the treaty than if it is directed against any possessions or forces which the State may have outside the region. The support is automatic in the former case, not in the latter. To render it is an individual duty in the former case once the State rendering it is satisfied that the aggression has occurred; in the latter case it is a collective duty and depends on a decision by the whole body of participating States.

The region in question is more widely drawn in the Rio than in the Brussels Treaty. It takes in the whole American land-mass, including Canada, from Pole to Pole, and embraces the islands lying to the East and West of it. That delimitation is natural, for Cuba and Haiti are signatories. The Falkland Islands are included; so are their dependencies in the Antarctic—lately the scene for a political *divertissement*. Article 3 of the Treaty prescribes the action to be taken in the event of an armed attack upon an American State within this area. First, each party to the Treaty is bound to assist the victim to meet the attack. Next, the Organ of Consultation (see below) is to meet without delay to examine the first-aid measures already taken by the individual States and to agree upon further measures to be taken by the States as a whole. The Organ of Consultation is also required (by Article 6) to meet immediately in order to decide upon the action necessary if "the inviolability of the territory or the sovereignty or political independence of any American State should be affected by an aggression which is not armed attack or by an extra-continental or inter-continental conflict, or by any other fact or situation that might endanger the peace of America." There is here, it will be seen, no obligation to render first-aid; in a statement made by the United States delegation at Rio and published in the State Department Bulletin giving the text of the Treaty, the effect of the Article was explained thus:—"No geographic limitations are stipulated with respect to any of the cases covered by Article 6, which establishes a general obligation to consult in order to agree on the measures which should be taken."

The Organ of Consultation referred to above is composed of the Foreign Ministers of the American Republics which have ratified the Treaty, but Article 11, which sets it up, contemplates that some different manner or organ of consultation may be substituted for it. Its decisions require a two-thirds majority of all States which have ratified the Treaty, not, it should be noted, of States present at the voting. There is no right of individual veto as there is under the Charter.

Under the Brussels Treaty the obligation to render assistance is automatic in Europe but not elsewhere. (What "Europe" means for this purpose is not defined. Presumably it would include Malta but not Cyprus—the former is shown in maps as belonging to Europe, Cyprus as belonging to Asia.) Article 4 provides that if any party to it is the object of an armed attack in Europe, the other parties will afford that party "all the military and other aid and assistance in their power." As regards aggression outside Europe, Article 7 provides that at the request of any party the Consultative Council shall be immediately convened to consider "any situation which may constitute a threat to peace, in whatever area this threat should arise." The same Council will also meet to consider "the attitude to be adopted and the steps to be taken in case of a renewal by Germany of an aggressive policy," and "any situation constituting a danger to economic stability."

The Consultative Council of the Brussels Treaty is the counterpart, with certain differences, of the Organ of Consultation of the Rio Treaty. It is to be "so organized as to be able to exercise its functions continuously," which means that it will have to have a permanent secretariat. The Organ of Consultation, on the other hand, is

not in being until it is summoned; that does not matter, for the Governing Body of the Pan-American Union is empowered to act for it pending its assembling. (The Governing Body of the P.A.U. consists of the diplomatic representatives of the American Republics at Washington.) How the Consultative Council is to be composed is not laid down in the Brussels Treaty. Presumably it will consist of the Foreign Ministers of the five Powers or their deputies. There is no provision as to voting procedure in meetings, and *a fortiori* no reference to a power of veto. Nor is there anything in the Brussels Treaty corresponding to Article 20 of the Rio Treaty, which provides that a State cannot be required to use armed force without its own consent. Another difference is that the Rio Treaty contains a definition of "aggression" and the Brussels Treaty does not. The silence of the latter is probably wise: aggression is practically impossible to define satisfactorily.

The Brussels Treaty provides, in Article 9, for the possible accession to it of other States acceptable to the five original parties on terms to be agreed. There is no corresponding provision in the Rio Treaty. One was hardly needed; all the American Republics except Nicaragua, whose Government had not been recognized by the other States, signed the Treaty, and it was not thought worthwhile, apparently, to provide for a later admission of the single absentee. Nicaragua could always be allowed to accede by special agreement.

The Rio Treaty remains in force indefinitely, but may be denounced at any time by notification to the Pan-American Union, and ceases to be in force for the denouncing State two years thereafter. The Brussels pact has a term of fifty years, after which it will cease to be in force for any party which has previously given a year's notice of denunciation to the Belgian Government.

The British Dominions are not parties to the Brussels Treaty. That is natural and need not cause any practical difficulty; they were not parties to the Treaty of Locarno of 1926. The position of one of the Dominions is peculiar in some respects, in relation not to Brussels but to Rio. Canada is not a party to the Rio Treaty but lies entirely within the zone which is defined by the Treaty and within which any party to it is entitled to collective assistance against an aggressor. Canada could not call, of right, for assistance, but, treaty or no treaty, is fairly certain to receive it from her great neighbour to the South. As Mr. G. F. Eliot points out (*The Strength We Need*, 1946, p. 120), the defence of Canada and that of the United States are indissolubly linked; "America faces North," he says, "it is from that quarter that an attack is to be feared, not from East and West as in the days when Germany and Japan were armed and menacing. It would be imperative for the defence of the United States that an enemy should be denied access to Canada. She has vital outposts in Alaska, such as Ladd Field at Fairbanks. The Alaska Highway would have to be kept open, and it runs through the Dominion. The protection of the uranium mines in northern Canada is no less the concern of the United States than of the Dominion. It would make, indeed, little practical difference if Canada were formally a party to the Rio Treaty. She will benefit from it as the result of the facts of geography and the change in strategic conditions in our time."

It cannot but be an advantage to the whole British Commonwealth that the security of the greatest of its limbs should have received this uncovenanted reinforcement. The heart of the Commonwealth is likewise strengthened, this time as the result of the new five-Power alliance. Britain will now have the foothold in the Low Countries as well as in France which she lacked in 1914 and 1939, and she will be free to do what was not permissible then, to plan and organize defence where it should be possible

to hold an enemy at a greater distance from our shores. The five countries which have signed the Brussels pact will represent together a war-potential which no enemy, however powerful, can afford to ignore. They will have behind them, moreover, in all human probability, the war-potential of the United States, by far the most formidable in the whole World. Whether that country formally guarantees the new alliance, either in its present or in any developed form, there is very little doubt that if it came to a conflict with the only country from which any serious danger is to be feared, the great Republic would be heart and soul behind the West European Allies; and its intervention would be far more prompt than it was in the last two wars. There has been, in fact, a revolutionary change in American policy, a change more momentous than any scientific development affecting strategy. American determination to set the free nations on their legs alike in economic and political matters will be the greater the clearer those nations make their determination to help themselves. They have shown that they are so determined by entering into the Brussels pact, and the great importance of that pact lies in its effect upon opinion in the United States. The welcome which it has had in that country is a significant and most heartening phenomenon.

## THE INTERNATIONAL SITUATION

### THE WESTERN UNION

THE U.S. Secretary of State—Mr. Marshall, crystallized the present state of international relations when he said<sup>1</sup> that there is “a world-wide struggle between freedom and tyranny; between the self-rule of the many as opposed to the dictatorship of a ruthless few.” He also pointed out that “critical situations are not confined to Europe: they exist in the Middle East, in Indonesia, in China; and we cannot ignore Latin America, or our responsibilities in Japan and Korea.”

This “cold war” has been provoked and is being waged ceaselessly by—to quote Mr. Marshall again—a “small group of men, possibly a dozen.” The authors of this tribulation are now in the cleft-stick in which all dictators find themselves sooner or later—if they go forward with their policy of predatory aggression they are heading for a real war, but if they try to draw back they will lose “face” and power at home: they are between the Scylla of greed and the Charybdis of fear. Therein lies the greatest danger to the peace of the World to-day. That much has become clear to the nations whose peoples are on the side of freedom, and they realise that the only way to check this menace is to band together and present a united front so formidable that the conspirators in Moscow will be more afraid of the consequences of further aggression than of any internal insurrection. Hence the rapid development of the Western Union.

### THE BRUSSELS TREATY

An important step to weld the partnerships of this Union was taken when Britain, France, Belgium, Holland and Luxemburg signed a 50-year Treaty of Economic and Social Collaboration and Collective Military Aid at Brussels on 17th March, 1948. The first of the various objects of this Treaty, laid down in the Preamble was:—

“to reaffirm their faith in the fundamental human rights, in the dignity and worth of the human person, and in the other ideals proclaimed in the Charter of the United Nations.”

The next was:—

“to fortify and preserve the principles of democracy, personal freedom and political liberty, the constitutional tradition, and the rule of law which are their common heritage.”

The Article relating to mutual defence reads:—

“Article 4.—If any of the Parties should be the subject of an armed attack in Europe, the other Parties will, in accordance with Article 51 of the U.N. Charter, afford the party attacked all military and other aid and assistance in their power.”

Although the Dominion Governments were not parties to this Treaty, they were kept fully informed of the negotiations and given the text.

On 18th April, the Foreign Ministers of the five Powers met in Paris and agreed on the permanent consultative arrangements designed to link the Powers economically, politically, and militarily.

In order to facilitate more frequent meetings of the five Powers' representatives, an Ambassadors Committee was formed and welcomed by Mr. Bevin in London on

<sup>1</sup> In an address to the University of California on 19th March 1948.



24th April. An indication that the military aspects of the Treaty received immediate attention was given by the presence at the meeting on that same afternoon of Lieut.-General Hollis—Chief Staff Officer to the Ministry of Defence and Deputy Secretary (Military) of the Cabinet.

The next step in making the Treaty an effective instrument of security was a meeting in London by the Defence Ministers of the five Powers on 30th April. The Ministers were accompanied by the Chiefs of Staff. A Military Committee to work out the details of defence plans has been set up under the Ambassadors' Committee.

#### UNITED STATES' SUPPORT

It will, of course, immensely strengthen the Western Union if it receives the active military support of the United States. That country is under no delusion that the menace to freedom in Europe is also a menace to freedom in the whole American continent. Polar maps, sometimes illustrating the ease with which Russia could attack the United States and sometimes used to demonstrate the potentialities of direct air attack on any part of the Soviet Union, are increasingly appearing in the American Press. Nevertheless, it is not unnatural that the U.S. Government should have made it clear that, before associating with the Five Powers' defensive planning, they wish to see whether the latter will be able to set up a strong system of security for themselves. It may well be that the complete failure, so far, of the U.N. Security Council in New York to produce any effective organization to oppose aggression makes the American attitude towards this new attempt at Collective Security somewhat sceptical, if not cynical. There are, however, two great differences between the task of the Security Council and that of the Western Union Military Committee: the former has been trying to set up world-wide machinery to meet any and every form of aggression, while the latter has only to co-ordinate the efforts of a limited number of Powers, closely associated geographically and confronted with a common menace; also the veto, which Russia has used consistently to put a spanner in the works of the Security Council, is not likely to trouble the Military Committee.

What is important is that the practical planning for a war, if it should be forced on the Free Nations, shall be done without delay by their professional officers and experts. There is no time to waste on political platitudes or generalities—nor will they impress the heads of the Armed Services in the United States.

#### SOUTH AMERICAN AGGRESSION

Three South American Powers—the Argentine, Chile and Guatemala—have been indulging in the popular pastime of pulling the British lion's tail.

#### ANTARCTIC LANDINGS

In December of last year, the British Ambassador in Buenos Aires presented a Note expressing British "anxiety" at the activities in the Antarctic of an Argentine naval expedition which had been visiting certain parts of the Falkland Island Dependencies. The Note suggested that the Argentine should submit the claims she had been making to Antarctic sovereignty to the International Court of Justice for adjudication. A second Note was sent expressing "surprise" at the continued violation of British territory and territorial waters by Argentine vessels.

On January 28th last, the Argentine government replied to the effect that both the Falkland Islands and their Dependencies were considered Argentine national territory by right, and therefore no question of adjudication arose.

Meanwhile the British Ambassador in Santiago had been engaged in a similar exchange of Notes with the government of Chile, protesting against "acts of trespass" in the Dependencies, more particularly against the Chilean Navy having set up a permanent post on Greenwich Island (South Shetlands). Chile also claimed sovereignty over the area concerned. Both replies referred to an Argentine-Chilean agreement in July, 1947, asserting their "indisputable rights" in the "South American Antarctic."

Early in February, the Chilean President, accompanied by Army officers and representatives of the Chilean Congress, took passage in a transport to inaugurate two Chilean Army bases on Greenwich Isles. The President hoisted the Chilean flag and claimed that, "as the legitimate successor of the Spanish Crown" in the South American Antarctic, Chile exercised "indisputable rights of sovereignty" over those regions.

Later in the month an Argentine naval squadron which included two cruisers and six destroyers carried out exercises in British Antarctic waters, meeting the Chilean President's ship off Deception Island. The squadron returned to the mainland on 29th February.

Up to the 26th February, the only British warship in South American waters was the sloop, H.M.S. "Snipe." On that day the 8-in. cruiser "Nigeria" arrived from the South African station at Port Stanley in the Falklands. Subsequently the two ships visited the Falklands Dependencies.

Answering a question in Parliament, the Prime Minister, Mr. Attlee, gave an assurance that the British Government would not be "cheeked or chivied out of British territory anywhere in the World." Mr. Bevin subsequently stated: "These expeditions and the declarations accompanying them in no way affect the question of title or sovereignty in these areas" and were merely "gestures in support of claims not recognized by other nations." Later he said: "H.M. ships and magistrates in charge of British-occupied posts have instructions to take all necessary measures to safeguard the British legal title to sovereignty in the Dependencies." The foreign squatters do not appear, however, to have been turned out.

The whole affair doubtless arose from a desire on the part of the parties in power in the Argentine and Chile to gain political prestige by cheeking Britain when her Navy was at its lowest ebb. It may have little importance for the moment, but it is yet another warning of what is liable to happen to our interests anywhere in the World if we do not police them effectively. One bright spot was a prompt offer by the Government of Australia to send one of their cruisers to the Falklands to reinforce Britain.

#### BRITISH HONDURAS

In sharp contrast to the "tail pulling" at one extremity of South America was the immediate check by the Navy on the spot of a similar attempt at the northern end of the sub-continent.

In a statement to Parliament on 3rd March, the Foreign Secretary, Mr. Bevin, said that rumours had reached H.M. Government that there was a possibility that "certain elements in Guatemala" might try to stage an incident in British Honduras; that inflammatory articles had appeared in the Guatemalan press; and that a resolution (which had not been accepted by the President) had been put forward in the Guatemalan Congress advocating the immediate invasion of the British Colony. It had been considered wise to send H.M. cruisers "Sheffield" and "Devonshire" to Belize to ensure the protection of life and property.

The "Sheffield," flying the flag of Vice-Admiral Sir William Tennant, arrived off Belize on 28th February; the "Devonshire," with a detachment of the Gloucestershire Regiment from Jamaica, arrived two days later. The two ships landed bluejackets, Royal Marines, and the Gloucestershires, equipped with lorries, jeeps, anti-tank guns and A.A. artillery. Immediate dispositions were made to safeguard the frontier from any Guatemalan attack.

The reactions in Belize to this situation was a mass demonstration of loyalty to Britain and the Crown by over 10,000 citizens. A resolution was adopted in which reference was made to the occasion, 150 years ago, when the people of Honduras "did defy and defeat the men of Spain and made secure to themselves and their descendants for all time their proud and sacred British heritage." This related to the attack on the Colony in 1798, when Britain was occupied in fighting Napoleon, by a strong Spanish squadron which was successfully beaten off by H.M.S. "Merlin," 16, under Commander John R. Moss, and an improvised local flotilla, manned by the colonists, in the Battle of St. George's Key on 10th September of that year.

Some acrimonious Notes were exchanged between Guatemala and Great Britain. The former describing the arrival of the British cruisers in "Guatemalan waters" as "unjust provocation" and an "insult to Guatemalan dignity," and accusing Britain of not wishing to seek a settlement of the claim to "that part of the national territory retained by a powerful empire"; the latter pointing out that British Honduras had been undisputably British for over a hundred years and regretting that the Guatemalan government had not felt able to agree to an impartial investigation by the International Court of Justice.

#### THE PAN-AMERICAN CONFERENCE

An attempt to capitalize these incidents was made at the Pan-American Conference held in Bogotá, Columbia, early in April, when a resolution was put forward by Argentina that the Conference should declare that "colonization or *de facto* occupation be ended" and that "the legal titles that the American republics possess, give rights, responsibilities and titles against the foreign-occupying nation of the Continent."

Consideration of this resolution and other business of the Conference was interrupted by a revolution in Bogotá, started by the assassination of the leader of the Columbian Liberal Party. This was followed by the wrecking of the Capitol and other buildings, and general looting. With the support of the Columbian army, a new government was set up. It was significant that one of their first acts was to break off diplomatic relations with Russia and give the Soviet representatives notice to quit. In due course the Conference reassembled.

The American Secretary of State, Mr. Marshall, declared that the colonies issue did not properly belong to the discussions and that the United States would not support any resolution which appeared to prejudice the case against a friendly nation. An amended resolution was then framed, but this met with opposition from the United States, Brazil and other countries. It seems not improbable that, for the time being at any rate, this anti-British movement will fizzle out.

#### PALESTINE

On 19th March, it was announced at Lake Success that American support for the General Assembly's partition scheme for Palestine had been withdrawn and that the United States intended to recommend to the Security Committee the setting up of a temporary trusteeship for all Palestine.

The same day, the British Government introduced an amendment to the Palestine Bill declaring specifically that the date for ending the British mandate should be 15th May, 1948, or such earlier date as may be decided by Order in Council.

As that date approached, Arab-Jewish tension greatly increased, and the situation took on more and more a state of civil war with the continuously diminishing British Army trying to keep the peace. In effect, partition is rapidly coming about, but in a military instead of a political sense.

The United Nations Organization has, so far, proved no more capable of backing their decisions with the indispensable force than their ill-fated predecessors—the League of Nations. The fate of Palestine and all that hinges on it are clearly in the melting pot and give rise to the gravest anxiety.

It is highly significant that wherever Britain has relinquished her long-established rule or weakened or withdrawn the policing forces which the Services provide, good government and peaceful conditions give place to political disorder and internecine warfare.



## CORRESPONDENCE

(Correspondence is invited on subjects which have been dealt with in the JOURNAL, or which are of general interest to the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the JOURNAL.—EDITOR.)

### WALKING-OUT DRESS

To the Editor of the R.U.S.I. Journal.

SIR,—No doubt the walking-out dress suggested by "Observer" in the February JOURNAL would make a comfortable kit, but it should be issued to the regiments (Territorial as well as Regular) in the colour and with the facings of their former ceremonial uniform, thus restoring to some small extent the old full-dress without losing the comfort of the new kit.

The issue of such uniforms would, I imagine, not only be welcomed by those now serving, but would also have a salutary effect on recruiting.

The head-dress of the new uniform should be the forage cap with peak. The beret is most unsuitable for ceremonial and walking-out.

The soldier used to take a pride in the distinctive uniform peculiar to his regiment or corps.

9th March, 1948.

H. F. J. BURN.

SIR,—With reference to the letter from Observer, should not there be three distinct types of walking-out dress to correspond with: (a) the sports coat and flannel bags; (b) the lounge suit; and (c) the best suit worn by the civilian on appropriate occasions?

One has met in the past the unfortunate Royal Marine on a country walk in immaculate cloth trousers, blue suit, white belt, looking very hot and dusty and wrongly dressed. Should not a simple battle dress, without a belt, be the dress for this type of walking out? It might be styled "Country dress."

Again, a soldier going to the pictures, or walking out on a less formal occasion requires to be dressed in something neat and comfortable, but not ostentatious. The blue patrol of the modern soldier, with no belt but with collar and tie, fills the bill admirably. This might be called "Town dress."

However, on formal occasions, the soldier requires something very smart, and striking and coloured striped trousers, a good khaki cloth coat, distinctive cap, lots of colour and brass, patent white leather belt, appears to be the order of the day. This might be designated as "Formal dress."

SARTORIUS.

SIR,—I have read "Observer's" letter on the above subject in the February number with much interest, and am in agreement with him that khaki should now be regarded as the traditional colour for the Soldier's uniform and that the idea of blue for a walking-out dress should be discarded.

I also agree that the jacket for walking out should be of fine cloth with roll-back collar, cut on similar lines to the officers' service dress jacket but with shorter skirt, khaki shirt and khaki tie.

I do not, however, agree with dark blue trousers being worn with a khaki tunic, as khaki and dark blue do not combine well. Why not the kilt for Highland regiments, the trews for Lowland regiments and well-cut khaki trousers for the remainder? Colour could be introduced by piping on the shoulder straps in the colours of the regimental facings or colours denoting arm of service, while units of the Royal Armoured Corps could wear shoulder-straps of chain mail.

Piping could also be worn on the seam of the trousers leg.

The head-dress for walking out should be the round forage cap with "cheese-cutter" peak—which cannot be tucked under the shoulder-strap—except for Scottish regiments.

who would wear the glengarry or Balmoral bonnet. Let the beret be confined to wear with battle dress except perhaps for those regiments with whom it is associated, e.g., 11th Hussars and Royal Tank Regiment.

For walking-out, a belt of khaki cloth could be worn and also shoes instead of boots.

The above uniform could be adapted for ceremonial wear by the addition of web anklets and the substitution of boots for shoes and of the cloth belt by a web belt and frog.

Officers would of course wear the present pattern of khaki service dress with either Sam Browne belt or cloth belt for walking out and the Sam Browne for "ceremonial."

I understand that the retention of the Sam Browne belt is doubtful. It is to be hoped that this is not so. Besides being extremely smart, it is one of our few original contributions to military dress design and many foreign Powers have paid us the compliment of copying it.

March, 1948.

"VETERANUS."

SIR,—The walking-out dress suggested by "Observer" in the February number of the JOURNAL is highly to be commended. May one add further adornment for Cavalry—the shoulder chains that were introduced in the early nineties, so reminiscent of chain armour and of much India Service. Mounted on cloth the colour of the regimental facings, these shoulder pieces showing also the style and title of the regiment, should serve towards maintaining the traditions of the Army; the handsome French grey of the 21st might be worn again, and for regiments of higher number the colours of units disbanded after yeoman service in the Peninsular War—pink (22nd), crimson (23rd), light blue (24th), etc. Surely such touches of colour would enhance the pride of the warrior privileged to wear them.

11th March, 1948.

B. GRANVILLE BAKER,  
Lieut.-Colonel.

NOTE.—Further Correspondence on this subject has been unavoidably held over.—  
EDITOR.

### BOMBING AND STRATEGY

SIR,—I have to thank Air Vice-Marshal Baker for pointing out in his letter in the February number of the JOURNAL certain factual errors in my book *Bombing and Strategy*. Some of these were due to faulty editing, for which, of course, I take full responsibility. First as regards my statement that there were "412 U-boats actually at sea" in March, 1942. The figure originally written down was 41. The Air Vice-Marshal gives the figure as 48 and, no doubt, that is correct.

My information concerning bombers and Leigh Lights came from an authoritative source, but if they were not fitted, it strengthens the point I tried to make which was that, in view of the critical situation at sea, more aircraft with any improvisations that could be made should have been withdrawn from "strategic" bombing and sent to reinforce the sea and air forces operating in the Atlantic. As the bombers that were sent did such good work even without Leigh Lights, it seems a pity they were not sent sooner.

My statement that "nearly half" the U-boats sunk were sunk by aircraft is contested by your correspondent who claims four-sevenths. Assuming that the latter figure includes those sunk by the Fleet Air Arm, I gladly accept it as a closer approximation. This again bears out my contention that aircraft were a potent anti-U-boat weapon and therefore required in almost unlimited numbers in the Battle of the Atlantic and the Narrow Seas.

Air Vice-Marshal Baker is, of course, correct in the dates he gives for the Casablanca Conference and the taking over by the Naval Staff of Coastal Command operational control.

Now, while making full apologies to my readers for my errors, I do most earnestly hope that such justifiable criticism will not distract the objectivity of their thoughts from the strategic point of view presented. The subject is too big for that.

I think that the main features of the strategic situation in our struggle for sea power are brought out clearly enough in my booklet, although a more gifted author than myself

would have presented them in a more orderly fashion. Essentially, we see how grave was the menace to those sea communications on which the Country, Empire, our Allies and all our fighting Services (including Bomber Command) depended. We see a large part of the Allied air forces, capable of turning the scales at sea, employed bombing centres of production and doing far less damage to the enemy than his attacks on our sea communications did to us. We see our strategy divided by having two main objects, and we see, once again in our history, a forgetfulness of the full implications of sea-power—a power in which in these days the air can take such an immense part.

10th April, 1948.

G. C. DICKENS,  
Admiral.

### THE OFFICER'S CAREER

SIR,—In the discussion after the lecture on "The Supply and Training of Officers" it was left to the Headmaster of Shrewsbury School—Mr. J. F. Wolfenden, to point out that if we are to recruit our Corps of Regular officers from the best of our schoolboys they, like "their hard-headed fathers," will want to know beforehand where a Service career will lead to.

"When you come out of the R.A.F. what happens then?" As long as the present system of early retirement "to make way for younger officers" exists, the average candidate for a Commission must expect his career to come to an end at 45, or at all events, before he is 50, when he will hardly have reached his prime, when his contemporaries in the civil professions and in industry are beginning to earn "big money" and have many years of work ahead of them.

Of course the retired officer will be given a reasonably good pension; but is this sufficient reward for the termination of a career, and a life sentence of enforced idleness, for that is what may be his lot unless he can get a job "either as bursar in a Public School or as Secretary of a golf club" to quote Mr. Wolfenden again.

In an article in the JOURNAL for May, 1943, Brigadier A. T. Shakespear suggested that, on reaching the age for retirement from the Active List of the Army, officers should be given the opportunity of transferring to a list of "Static Personnel." Here they would serve (at their own choosing) until reaching the age of 60. Their duties would be administrative; the scheme would open up a potential career in the Army to the same age limit as that for Civil Servants. Now that so much of our industry is being nationalized, there would seem even wider scope for this idea. There must be many posts in the administrative arrangements of our nationalized corporations which could be filled to perfection by retired regular officers of any of the three Services.

On the other hand there might well be many officers with more ambitious ideas who would want to start off on their own in another profession. For these, I suggest, Government assistance should be forthcoming in the way of vocational training to fit them, either for posts in industry or to qualify them for entry into one of the civil professions.

With such assurances the recruitment of the best of our youth for Commissions in H.M. Services would be stimulated, and the Government would have at its disposal a source of energy and ability for many years longer than it does.

25th March, 1948.

R. A. B. STONE,  
Group Captain.

### TOASTS IN THE ARMY

SIR,—Two small points in Lieut-Colonel C. C. R. Murphy's delightful article in the February JOURNAL "Toasts in the Army"—

(1) 89 of the "Die-hards" were killed at Abulera, not 415.

(2) There was no "Emperor Joseph Napoleon." He was King Joseph (Bonaparte).

12th March, 1948

IAN MACALISTER



## GENERAL SERVICE NOTES

### FAR EAST DESPATCH

A Despatch, submitted to the British Chiefs of Staff on 28th May, 1942, by Air Chief Marshal Sir Robert Brooke-Popham, G.C.V.O., K.C.B., C.M.G., D.S.O., A.F.C., Commander-in-Chief in the Far East, describing operations in the Far East from 17th October, 1940, to 27th December, 1941, was published in the *London Gazette* of 22nd January, 1948.

### BRITISH FORCES IN JAPAN

It was announced last February that the United Kingdom Government had requested further considerable reduction in the size of the United Kingdom Contingent of the British Commonwealth Occupation Force in Japan. The United States, Australian and New Zealand Governments have given their agreement. The reductions in the size of the forces of occupation have been made possible by the success achieved by the military administration of Japan. The C.-in-C., B.C.O.F. was preparing a programme for these reductions which will be completed as soon as possible, dependent upon the availability of shipping.

### WESTMINSTER ABBEY MEMORIAL

The Admiralty announced on 15th March, that representatives of the three Services were to attend the unveiling and dedication of a Joint Services Memorial in Westminster Abbey on 21st May to commemorate those who lost their lives in the Submarine Branch of the Royal Navy (1914-18 and 1939-45), the Airborne Forces (1939-45) and the Commandos (1939-45). The memorial erected in the cloisters of the Abbey was designed by Mr. Gilbert Ledward, and Mr. Churchill was invited to perform the unveiling ceremony and give an address.

### CANADA

#### TRAINING OF OFFICERS

In March, the *Times* Correspondent reported from Ottawa as follows :—

“ New arrangements for the training of officers for the Royal Canadian Navy, the Canadian Army, and the Royal Canadian Air Force have been announced by Mr. Brooke Claxton, Minister of National Defence.

“ For the purpose of co-ordinating the Services, under the recently reorganized system of unified command, the authorities will in future require the same entrance qualifications and the same general education for Officer Cadets in the three Services. The policy has been worked out after studies of educational experience in Canada, Great Britain, the United States, Australia, and elsewhere.

“ Under the new system the Naval College at Royal Roads, British Columbia, and the Royal Military College at Kingston, Ontario, will train Cadets for all Services, and when those at Royal Roads have completed a two-year course the Cadets for all branches will go to Kingston. Cadets for the Executive and Marine Engineering branches, after two years at either college, will take special training before being posted as Sub-Lieutenants.

“ Arrangements have also been made with twenty-two Canadian universities under which undergraduates may join the Canadian Officers' Training Corps or University Naval Training Division. Students will receive theoretical training during the college term, and will spend over three months doing practical work with the Cadets from Royal Roads and the Royal Military College. A third source of officers will be by promotion from the ranks, and it is hoped that as many as twenty per cent. of the officers will be selected this way. Officer Cadets from the ranks will attend either one of the Service colleges or the Universities, at Government expense.”



## UNITED STATES

## FUNCTIONS OF THE SERVICES

Last Summer the United States Army Air Forces became a separate Service, to be called the U.S. Air Force (see November issue of this JOURNAL, page 605). The armed forces of the United States were to be co-ordinated ("unified") under a single Secretary of Defence.

*The Times* Correspondent reported on 28th March from Washington that the previous day the Secretary of Defence, Mr. Forrestal, published the decisions reached at a conference of the Chiefs of Staff on the division of functions between the three Services.

In spite of the theoretical unification of the armed forces, arguments between them have continued, and have been so publicized that many in Congress have said that it was useless to provide any more funds for the Services until they agreed between themselves.

The chief disagreement was between the Navy and the Air Force and centred on the naval decision to build an 80,000-ton aircraft-carrier. The Air Force contended that this could have no use except in a strategic bombing role and that strategic bombing was an Air Force responsibility. Mr. Forrestal's statement reveals that a compromise has been reached. The Air Force is confirmed in its responsibility for strategic bombing, but the Navy is assigned the "collateral" role of assisting the Air Force in bombing land targets when this might be advantageous in time of war. The Navy, on the other hand, is given the primary part in all anti-submarine warfare.

An article in *The Times* of 31st March provides fuller details of the Chiefs of Staff Report and the decisions regarding the Services' tasks.

"The primary functions of the Army are to organize, train, and equip Army forces for the conduct of combat operations on land; to provide Army forces for the defence of the United States and for the occupation of territories abroad; to develop, with the assistance of other Services, doctrines, procedures, and equipment for airborne operations. Its collateral functions include interdicting enemy sea and air power and communications through operations on or from land, and providing the forces and equipment for and to conduct controlled minefield operations.

"The Navy's primary functions are to train and equip the Navy and Marine forces for the conduct of operations at sea, including sea-based aircraft and their land-based naval and air components; to conduct air operations for the accomplishment of objectives in naval campaigns; to develop, with the assistance of the other Services, doctrines for amphibious operations; to be responsible for naval reconnaissance, anti-submarine warfare, the protection of shipping and mine-laying; to provide sea-based air defence; and maintain the Marine Corps for the defence of advanced naval bases. Collateral functions include interdicting enemy land and air power through operations at sea; conducting close air support for land operations; and participation in the general air effort as directed by the Joint Chiefs of Staff.

"The Air Force's primary function is to train and equip air forces; to be responsible for strategic air warfare; to furnish close combat and logistical support to the Army; to organize and equip air forces for joint amphibious operations; and furnish aerial photography. Collateral functions include interdicting enemy sea power through air operations; conducting anti-submarine warfare; the protection of shipping; and aerial mine-laying operations.

"Each Service has the collateral function of supporting and supplementing the other Services in carrying out their primary functions."

## NAVY NOTES

### GREAT BRITAIN

#### H.M. THE KING

It was announced from Buckingham Palace on 5th March that, in response to a suggestion made by his Prime Ministers in New Zealand and Australia, The King has graciously consented to visit these countries in the early part of 1949. His Majesty will be accompanied by The Queen and The Princess Margaret.

Subject to naval requirements, H.M.S. "Vanguard," in which the Royal party travelled to and from South Africa in 1947, will be used. The "Vanguard" is due to become operational again in September, 1948, after a long refit.

The following officers have been appointed Naval Aides-de-Camp to the King from 8th January, 1948, in place of the officers stated :—

Captain E. G. Abbott, A.M., in place of Captain W. G. Andrewes, C.B.E., D.S.O., promoted to Flag rank.

Captain O. L. Gordon, C.B., M.V.O., in place of Captain W. Y. La R. Beverley, C.B.E., promoted to Flag rank.

Captain J. R. S. Haines, C.B.E., in place of Captain P. B. R. W. William-Powlett, C.B.E., D.S.O., promoted to Flag rank.

Captain G. O. C. Davies, in place of Captain C. A. L. Mansergh, D.S.C., promoted to Flag rank.

Captain (Commodore, 2nd Class) A. L. Poland, C.B., D.S.O., D.S.C., in place of Captain A. F. de Salis, D.S.O., placed on the Retired List.

Captain H. Drew, C.B.E., D.S.C., in place of Captain N. J. W. William-Powlett, D.S.C., placed on the Retired List.

Captain D. K. Bain, D.S.O., in place of Captain F. S. Bell, C.B., placed on the Retired List.

Captain (Commodore, 2nd Class) A. D. Nicholl, C.B.E., D.S.O., in place of Captain F. S. W. de Winton, placed on the Retired List.

The following officers have been appointed Naval Aides-de-Camp to the King from 29th January, 1948, in succession to the officers stated :—

Captain (E) C. R. O. Burge, in succession to Captain (E) R. P. Chapman, placed on the Retired List.

Captain (E) W. D. Brown, D.S.C., in succession to Captain (E) F. J. A. Coleby, placed on the Retired List.

Colonel R. H. Quill, R.M., has been appointed a Royal Marine Aide-de-Camp to the King, with effect from 7th April, in succession to Colonel R. A. R. Neville, R.M., who has been promoted to the rank of Major-General.

#### THE DUKE OF EDINBURGH

Lieutenant H.R.H. the Duke of Edinburgh has been appointed from 30th March for the course at the Royal Naval Staff College, Greenwich.

#### FLAG APPOINTMENTS

**FIRST SEA LORD.**—It was announced by the Admiralty on 14th February that the King has approved the appointment of Admiral Lord Fraser of North Cape as First Sea Lord and Chief of Naval Staff, in succession to Admiral of the Fleet Sir John H. D. Cunningham. Admiral Lord Fraser will join the Admiralty early in August.

**PORTSMOUTH.**—The King has also approved the appointment of Admiral Sir Algernon U. Willis as Commander-in-Chief, Portsmouth Command, in succession to Admiral Lord Fraser. Admiral Willis will assume command about the end of July.

**FIFTH SEA LORD.**—It was announced on 21st April that the King has approved the appointment of Vice-Admiral G. E. Creasy as a Lord Commissioner of the Admiralty,

Fifth Sea Lord and Deputy Chief of Naval Staff (Air), in succession to Vice-Admiral Sir Philip L. Vian. The appointment is to take effect on 29th September.

**EAST INDIES.**—The Admiralty announced on 20th February that the King has approved the appointment of Vice-Admiral C. H. L. Woodhouse to be Commander-in-Chief, East Indies Station, in succession to Admiral Sir Arthur F. E. Palliser, from April, 1948.

The following appointments were announced by the Admiralty on 2nd March :—

Vice-Admiral E. R. Archer to be Flag Officer Commanding, Scotland and Northern Ireland, in succession to Admiral Sir Frederick H. G. Dalrymple-Hamilton (to take effect in July).

Rear-Admiral P. W. B. Brooking to be Flag Officer, Gibraltar, and Admiral Superintendent, H.M. Dockyard, Gibraltar, in succession to Vice-Admiral E. R. Archer (to take effect in May).

Rear-Admiral E. W. L. Longley-Cook to be Director of Naval Intelligence, in succession to Vice-Admiral W. E. Parry (to take effect on 28th May).

Rear-Admiral C. A. L. Mansergh to be Deputy Controller and Director of Naval Equipment, in succession to Rear-Admiral A. C. G. Madden (to take effect in June).

Rear-Admiral C. P. Clarke to be Flag Officer, Malta, in succession to Rear-Admiral M. H. A. Kelsey (to take effect in June).

The following appointment was announced on 23rd April :—

Rear-Admiral G. Grantham, C.B., C.B.E., D.S.O., to be Flag Officer (Submarines) in succession to Commodore B. Bryant, D.S.O., D.S.C.; the appointment to take effect on 23rd August, 1948.

**SOUTH ATLANTIC.**—It was announced on 12th March that the King has approved the appointment of Rear-Admiral E. D. B. McCarthy to be Commander-in-Chief, South Atlantic Station, in succession to Vice-Admiral Sir Clement Moody (to take effect in May).

**AIRCRAFT-CARRIERS.**—The Admiralty announced on 15th March the appointment of Rear-Admiral M. J. Mansergh as Flag Officer Commanding, 3rd Aircraft Carrier Squadron, from July.

**WASHINGTON.**—The Admiralty announced on 20th February that Rear-Admiral B. B. Schofield has been appointed to succeed Rear-Admiral P. W. B. Brooking as Chief of Staff to the Admiral, British Joint Services Mission (Naval Staff), Washington.

**SUPPLY AND EDUCATION.**—The following were announced by the Admiralty on 6th April :—

Acting Rear-Admiral (S) G. H. Bankart to be promoted to Rear-Admiral (S) and to be Director-General, Supply and Secretariat Branch, in succession to Acting Vice-Admiral (S) Sir Malcolm G. S. Cull, to date 4th August, 1948 (to serve in the acting rank of Vice-Admiral (S) while holding this appointment).

Instructor Captain W. A. Bishop, R.N., to be Director of the Education Department, in succession to Instructor Captain W. I. Saxton, R.N., to date 1st July, 1948.

#### CAPTAINS' APPOINTMENTS

The following are among the new appointments announced for Captains, R.N. :—

Captain C. F. W. Norris to H.M.S. "Duke of York," as Captain of the Fleet on the Staff of the Commander-in-Chief, Home Fleet, succeeding Captain C. A. E. Stanfield, from 4th March.

Captain A. C. C. Miers, V.C., to command the R.N. Air Station, Stretton, from 26th February.

Captain W. J. C. Robertson to command H.M.S. "Vernon," torpedo school and experimental establishment, Portsmouth, from 18th May.

Captain R. J. R. Dendy to be Director of Movements, Admiralty, vice Captain H. M. C. Ionides, from 20th February.

Captain H. M. C. Ionides to command H.M.S. "Diadem" from 30th March.

Captain J. A. W. Tothill to be Assistant Director of Plans, Admiralty, from 3rd March, vice Captain K. Mackintosh.

Captain K. Mackintosh to command H.M.S. "Liverpool."

Captain D. Orr-Ewing to command H.M.S. "Anson" and as Flag Captain and Chief Staff Officer to the Flag Officer of the Training Squadron.

Captain A. J. Baker-Cresswell to join the Admiralty Naval Staff, 8th March, and later to succeed Colonel R. Quill, R.M., as Deputy Director of Naval Intelligence.

Captain W. G. C. Stokes to be Assistant Director of Aircraft Warfare, vice Captain P. W. Humphreys.

Captain J. Hughes-Hallett to command H.M.S. "Illustrious" from 14th June, vice Captain R. A. B. Edwards.

Captain R. Gotto to be Chief Staff Officer (Administration) on the Staff of the Commander-in-Chief, Mediterranean, vice Captain P. S. Smith.

Captain R. J. O. Otway-Ruthven to be Director of the Trade Division, Admiralty, from 20th April, vice Captain T. L. Bratt.

Captain P. L. Saumarez to succeed Captain A. H. Thorold for duty with the defence research policy staff, Ministry of Defence, from 15th June.

Captain J. H. F. Crombie to command the Signal School from 26th April, vice Captain C. L. Firth.

The Lords Commissioners of the Treasury have appointed Rear-Admiral H. G. Thursfield and Mr. A. J. Villiers as trustees of the National Maritime Museum, in succession to the late Admiral of the Fleet Sir Osmond de Beauvoir Brock and the late Mr. Charles Jarman.

#### RETIREMENTS

Rear-Admiral (E) C. H. Nicholson, C.B., C.B.E., placed on Retired List (15th January, 1948).

Rear-Admiral (E) B. L. G. Sebastian, C.B., placed on Retired List (29th January, 1948).

The Admiralty on 9th March announced that Admiral Sir E. Neville Syfret would be placed on the Retired List at his own request from 10th March in order to facilitate the promotion of junior officers. An officer who has been supernumerary to establishment will be absorbed in the vacancy created by Admiral Syfret's retirement. Admiral Syfret was received by the King at Buckingham Palace on 13th February upon relinquishing his appointment as Commander-in-Chief, Home Fleet, when His Majesty invested him with the Insignia of a Knight Grand Cross of the Order of the Bath (Military Division).

The Admiralty announced on 3rd February the retirement of Rear-Admiral J. W. Durnford with effect from 12th February, and of Rear-Admiral H. Hickling with effect from 12th January.

The Admiralty announced on 15th April that Admiral Sir Geoffrey J. A. Miles, K.C.B., K.C.S.I., is placed on the Retired List.

#### WAR MEMORIALS

**CHATHAM WAR MEMORIAL.**—Work has begun on a memorial to the warships manned by the Chatham Port Division and lost during the War, and to officers and men of the Division who lost their lives. The memorial includes a series of ten stained glass windows and the decoration of the choir and sanctuary of the Church of St. George, Chatham. The Chatham Barracks Canteen Committee has given a sum sufficient to meet the greater part of the cost, but subscriptions may be sent to the Senior Chaplain, R.N. Barracks, Chatham.

**H.M.S. "EXETER" MEMORIAL.**—In the Chapel of St. Andrew at Exeter Cathedral on 1st March, the Bishop of Exeter, Dr. C. E. Curzon, dedicated a memorial window to officers and men of H.M.S. "Exeter" who lost their lives in the second world war.



Captain O. L. Gordon, R.N., who was in command when the ship was sunk on 1st March, 1942, in the Java Sea, invited the Dean, Dr. S. C. Carpenter, to accept custody of the window. The Rev. G. O'C. Fitzgerald, who was the ship's chaplain and spent five years in captivity, also took part in the service.

#### PERSONNEL

**ENTRY INTO DARTMOUTH COLLEGE.**—On 28th January, the First Lord of the Admiralty—Viscount Hall, in the House of Lords, and the Civil Lord—Mr. W. J. Edwards, in the House of Commons, made statements about the changes to be made in the system of entry of Cadets into the R.N. College, Dartmouth.

According to these statements, the new system of entry and its examination have been designed to ensure that no boy was prevented from competing by reason of his social status, school, or financial standing. In determining the details, the Admiralty has had full discussion with the Ministry of Education and other responsible educational authorities and associations, and has taken the opinion of eminent naval officers.

The new system would apply to the Executive, Engineering, and Supply branches. There would be three entries of Cadets in each year, and the new age at entry would be 16 to 16 years four months. Examinations would be held in or near the candidates' own schools. The interview part of the examination would be widened in scope. The first entry under the new system would be in September, 1948. The examination for this entry would be held in March. Cadets would spend six terms at the R.N. College, Dartmouth, followed by a period of eight months' training in a training cruiser, before they went to the Fleet as Midshipmen.

Tuition and maintenance would be free. The Admiralty would make actual provision of uniform and replacements during the Cadet period. Parents would be expected to pay for the cost of uniform and the Cadets' personal expenses, according to their means; under this arrangement some would not pay anything.

This was only one of the three sources from which the Royal Navy will obtain its officers. The Special Entry at the age of 18 will be continued and, as previously announced, the present aim of the Admiralty is to recruit up to 25 per cent. of its Commissioned Officers by promotion from the Lower Deck. They intend that half the remainder would ultimately be obtained from the age 16 Entry and the other half from the Special Entry.

**NUMBERS AFLOAT.**—In reply to a question in Parliament the Parliamentary Secretary to the Admiralty on 1st March gave the following figures of officers and ratings borne in the books of ships in full commission, sea-going ships employed on training duties, and ships in reserve, at the present time:—

	<i>Ships in full commission</i>	<i>Sea-going ships employed on training duties</i>	<i>Ships in reserve or reducing to reserve</i>
Officers ...	3,700	900	1,500
Ratings...	32,300	7,400	13,500

The Parliamentary Secretary also stated that the numbers of officers and ratings borne in shore establishments on 1st January, 1939, were approximately 4,000 and 41,000, respectively. The current corresponding numbers are approximately 8,500 officers and 77,500 ratings. Present conditions are, of course, abnormal.

#### WOMEN'S ROYAL NAVAL SERVICE

In March, Clarence Barracks, Portsmouth, which were formerly occupied by the Army, became the first W.R.N.S. barracks to be established in England. Fourteen officers and 100 ratings moved there from requisitioned premises in Portsmouth. Eventually the barracks will be used for all the W.R.N.S. at Portsmouth (about 600) except those at the Gunnery School, Whale Island.

## MATERIAL

**FIVE CAPITAL SHIPS SCRAPPED.**—A decision by the Government to dispose of certain major units of the Royal Navy was announced on 21st January. The statement to Parliament was as follows :—

"The battleship strength of the Royal Navy has been under review in the light of the age and condition of the ships concerned and their possible value in a future emergency. The useful life of a battleship is normally reckoned to be approximately twenty years. This period is calculated on a normal peace-time usage, and is greatly reduced when the vessels are subjected to arduous war service.

"As a result of the review the Admiralty has come to the conclusion that, of the capital ships remaining in the Royal Navy, the "Queen Elizabeth," "Valiant," "Renown," "Nelson" and "Rodney" are likely to be of the least value as fighting ships. The possibility of maintaining the battleships in reserve was taken into consideration, but they would be costly to maintain in this state both in money and man-power. Moreover, if they were to be of any value in a future emergency they would need extensive refits and modernization which, in view of the heavy cost and labour involved, could not be justified during the next few years. Even if the work was done the vessels would fall considerably short of the standard and capabilities of modern construction. In particular their speed could not be increased to such an extent as to render them capable of taking their place in a modern fleet.

"In view of the above considerations instructions have been issued that these vessels should now be scrapped. A number of cruisers and smaller ships, all obsolescent or of little fighting value, will also be disposed of in the near future. This action does not represent any new departure, but is a continuation of the process which has been going on since hostilities ceased under which redundant and out-dated warships have been scrapped or sold if a market could be found. The Admiralty is satisfied that these reductions do not reduce the effective strength of the Navy below that required to meet any emergency which is likely to arise in the foreseeable future."

**SUBMARINE RESCUE VESSEL.**—H.M.S. "Reclaim," which was launched from the yard of Messrs. William Simons and Co., Limited, at Renfrew on 12th March, is a submarine rescue vessel which will carry apparatus developed since the War, including an adaptation of the Cox underwater bolt-firing gun for salvage purposes. This gun, by the use of explosive propellants, can drive a rivet into a plate without prior drilling. It is now possible to drive a bolt with a hole down the centre—that is, a form of tube—through a steel plate. Such a tube could be driven into the skin of a submarine and a compressed air pipe could be attached to it. Through this pipe air could be forced into a flooded compartment with a view to expelling water through another orifice and causing a sunken submarine to be refloated.

**NEW SUBMARINE.**—H.M.S. "Andrew" has completed acceptance trials.

**LIGHT METAL COASTAL CRAFT.**—A light metal-alloy coastal craft was launched from the North Welsh yard of Messrs. Saunders Engineering & Shipyard Ltd., of Beaumaris, on 22nd April. The craft, an experimental one, is to be known as "M.T.B. 539." She is 75 ft. in length and has a beam of just under 20 ft. Her machinery is of normal internal combustion type.

The main interest in this design is that the hull, including the frames and skin, is made of an aluminium alloy, which weighs about one third the weight of steel. It will be somewhat lighter than an equivalent hull of wooden construction. Such a saving in weight can be used to make possible increased speed, increased range or increased armament and equipment. The method of construction may also make possible the more rapid production of such craft.

## ARCTIC CRUISE OF H.M. SUBMARINE "AMBUSH"

H.M. submarine "Ambush" returned to Port Edgar, Firth of Forth, on 18th March from a five weeks' submerged cruise in Arctic waters. She was commanded by Lieutenant A. G. Davies, R.N., and carried a medical officer—Surgeon Lieutenant-Commander W. M. Davidson, R.N., who had previously been in the submarine "Alliance" during her long submerged cruise in tropical waters. The "Ambush" was submerged during most of the cruise, and many of her officers and crew had not seen daylight for more than a few hours. A hurricane which lasted three days forced her to the surface, where, said the commanding officer, she had to "just roll it out, hove to," close to the ice pack. Men on duty had to be lashed to their positions and those off duty had to be lashed to their bunks. The vessel rolled so much that none of her instruments was able to record the degree of roll. Even under the surface she rolled 15 degrees either side of vertical, whereas the normal roll when submerged is nil. The "snort" device which made possible the long under-water cruise gave good results, and in the opinion of the commanding officer the information gained has probably put the Royal Navy in the forefront in the use of this apparatus. The morale and health of the crew were most satisfactory. The majority were seasoned in submarine work, but were not specially picked for the job. The medical officer stated that the food on board was so good that they did not even have to issue vitamin tablets. On an average each man put on 10 lb. in weight.

## EXERCISES AND CRUISES

HOME FLEET.—Routine exercises from Portland were conducted in the second half of January by the operational force of the Home Fleet. The force included the cruiser "Superb" and the destroyers "Agincourt," "Aisne," "Dunkirk" and "Jutland." It left Portland on 17th February for Gibraltar on the Spring cruise. Leaving Gibraltar on 12th March, the force was attacked on the 16th by over eighty naval aircraft from Culdrose, Cornwall, in the largest naval air operations held since the end of the War. The Commander-in-Chief—Vice-Admiral Sir Rhoderick McGrigor, and the Flag Officer, Flying Training—Rear-Admiral C. E. Lambe, watched the progress of the "battle" as it was plotted in the operations room at Culdrose.

FISHERY PROTECTION.—The sloop "Cygnet," of the Fishery Protection Flotilla, at the end of March escorted the Looe fishing fleets to their grounds 40 miles South-East of the Eddystone Lighthouse, following complaints that their gear had been wrecked by foreign trawlers.

SLOOPs AT ACCRA.—The sloops "Actaeon" and "Nereide," from Simonstown, anchored on 10th March off Accra, where riots had been reported. The town was subsequently quiet.

WEST INDIES.—Combined exercises by the America and West Indies Squadron of the Royal Navy and ships of the Royal Canadian Navy were held at the end of March. H.M.S. "Sheffield"—flagship of Vice-Admiral Sir William Tennant, and H.M. sloop "Sparrow," and the Canadian cruiser, H.M.C.S. "Ontario" and destroyers led by H.M.C.S. "Nootka," took part.

The training cruiser, H.M.S. "Devonshire," left Plymouth on 16th January for a cruise of two and a half months in the West Indies, during which she was to visit Barbados, Trinidad, Grenada, Antigua, Jamaica and the Virgin Islands, spending two days at Gibraltar during the homeward passage.

The Admiralty announced on 13th March that the destroyers "Battleaxe" and "Crossbow" would visit the West Indies and United States this Summer. They have been invited by the United States Navy to take part in joint exercises during their visit.

MEDITERRANEAN.—The Spring cruise of the Mediterranean Fleet began on 17th February, when the aircraft carriers, H.M.S. "Triumph" and "Ocean," seven destroyers, three submarines, three frigates and two sloops left Malta under the command of Vice-Admiral Sir Thomas Troubridge—Flag Officer (Air) and Second-in-Command, Mediterranean.



In the House of Lords on 10th March, the First Lord—Viscount Hall, stated that 52 ships had attempted to land illegal immigrants in Palestine since January, 1946. Nearly all of them were understood to have been organized on behalf of the illegal immigrant section of Hagana. They carried about 63,500 illegal immigrants.

RED SEA.—In reference to an Egyptian Government newspaper report that British warships were cruising off Bab el Mandeb, the Admiralty stated on 18th March that the Second Minesweeping Flotilla was engaged in sweeping just inside the southern entrance of the Red Sea. The sweep was a routine one, forming part of measures taken at various times in waters where mines may have been laid during the War.

PACIFIC.—Units of the British Pacific Fleet arrived at Saigon on 27th February on a week's official visit. They were H.M.S. "London"—flagship of Vice-Admiral Sir Denis Boyd, Commander-in-Chief, the destroyers "Constance," "Consort" and "Concord," and the sloop "Alert." This was the first official visit of its kind for ten years. Vice-Admiral Boyd was the guest of M. Bollaert, the French High Commissioner for Indo-China. He stated in an interview that the rebuilding of the Pacific Fleet to pre-war standard would begin in June with the return of some destroyers, and that aircraft carriers would return towards the end of the year.

#### FALKLAND ISLANDS DEPENDENCIES

H.M. sloop "Snipe," Commander J. G. Forbes, R.N., returned to Port Stanley on 1st February with Mr. Miles Clifford, Governor of the Falkland Islands, from a 15-day voyage into the Falkland Islands Dependencies sector of the Antarctic, during which British stations were re-established at Admiralty Bay, King George Island, and at Port Lockroy, in the Palmer Archipelago. Early in February, the "Snipe," with the Governor, visited Deception Island, in the South Shetlands.

On 16th February, Mr. McNeil, Minister of State, announced in the House of Commons that Argentine and Chilean naval forces were operating in British waters in the Falkland Islands Dependencies with the declared object of enforcing claims to sovereignty in this area. They had landed parties and purported to have set up military commands in British territory. Steps were being taken to ensure that the Governor of the Falkland Islands received the support he needed.

On the same night it was announced that H.M.S. "Nigeria" had left Simonstown for the Antarctic. She arrived at Port Stanley on 26th February. On 1st March, the "Nigeria," in company with the "Snipe," left Port Stanley on a tour of the Dependencies, with Mr. Miles Clifford on board. The ships returned on 11th March on the conclusion of a tour of all the bases illegally established by Argentina and Chile.

#### DEFENCE OF BRITISH HONDURAS

H.M.S. "Sheffield," flying the flag of Vice-Admiral Sir William Tennant, left Cartagena, Colombia, on 25th February for Belize—capital of British Honduras, because of possible incidents which might be staged by certain irresponsible elements in Guatemala. H.M.S. "Devonshire" was also sent there from Jamaica, taking troops of the Gloucestershire Regiment to protect British lives and property against possible harm in the event of an invasion of the colony.

On 28th February, Royal Marines from the "Sheffield" were sent to strategic points in British Honduras as far as the eastern border of Guatemala.

On 1st March, the "Devonshire" arrived and disembarked her troops.

On 16th March, the "Sheffield" left Belize, Vice-Admiral Tennant stating that "the defence of British Honduras is now satisfactorily in the hands of the Army."

#### NORTH SEA MINESWEEPING

In the House of Commons on 4th February, Mr. Dugdale, Parliamentary Secretary to the Admiralty, stated that all moored mines in the North Sea had been swept. There



are areas where aircraft-laid ground mines still exist, and these mines, which are particularly difficult to sweep, remain a danger to shipping. Swept channels, duly buoyed, have been established through these areas and, provided ships keep to these channels, there is only a small and very remote risk. These areas (covering approximately 8,000 square miles) are too vast to be swept, but in the course of time will become safe as the mines become inert. It is estimated that this period may possibly extend until about 1956, but an annual test is carried out in this zone to determine more closely the probable life of these mines.

Since the beginning of mine clearance after the War more than 7,000 mines had been destroyed in the East Atlantic zone, which includes the North Sea. An area of approximately 24,000 square miles which was previously dangerous to shipping on account of mines has been opened to unrestricted navigation.

#### THE NAVY ESTIMATES

The Navy Estimates for 1948-49 were issued on 24th February, and an Explanatory Statement by the First Lord (Cmd. 7337) on 27th February. The proposed provision for the year amounts to £153,000,000, a decrease of £43,700,000 on the sum of £196,700,000 voted for the preceding financial year.

Vote A (Numbers) provides for a maximum bearing of 167,300 for the Royal Navy, Royal Marines and ancillary Services, together with 1,592 Royal Marine Police. The figure of 167,300 includes 8,000 for the Women's Royal Naval Service and 300 for the Queen Alexandra's Royal Naval Nursing Service; it also includes 20,000 personnel, of whom 500 are W.R.N.S., on release leave.

Substantial progress has been made in clearing war terminal liabilities. The Estimates include provision of £4,000,000 for these as against £11,500,000 for 1947-48.

The policy of deliberately accelerating reductions in the Royal Navy to the manpower level contemplated for the next few years has necessarily involved some temporary dislocation and lack of balance, and for a time the immobilization of certain units of the Fleets. "The sooner these reductions are effected, the sooner will the Royal Navy attain stability and its accustomed peace-time efficiency."

The Statement includes a review of naval activities in connection with occupied and disturbed territories—Germany, Japan, Italy, Palestine, Aden, Mogadiscio and the Solomon Islands.

A table showing the strength of the Fleet in the various classes has the following in the "Operational" column:—

Battleships.—"Duke of York" and "Vanguard," (to be operational by August/September, 1948).

Fleet Carriers.—Nil.

Light Fleet Carriers.—"Ocean," "Triumph," "Theseus" (to be operational by June/July, 1948) and "Glory" (date uncertain).

Escort Carriers.—Nil.

Cruisers.—16, including one ("Liverpool") to be operational by April, 1948, four ("Sirius," "Diadem," "Cleopatra" and "Belfast") by Autumn, 1948, and one ("Jamaica") by the end of 1948. One ("Superb") to be immobilized in August, 1948.

Destroyers.—34, including five to be operational by June, 1948, eight by August/September, 1948, and three date uncertain.

Frigates.—25.

Monitors.—Nil.

Submarines.—26.

Minesweepers.—12.

Fast Minelayers.—Nil.

Other units of the Fleet are shown as "Training and Experimental," or "In Reserve or Reducing to Reserve."

No new ships have been laid down, either in Dockyards or private yards, during the current year and none will be started next year, but £8,012,751 is provided for ships under construction in 1948-49.

The following are in course of construction, although work on some ships is temporarily suspended :—

Fleet Carriers, 2 ; Light Fleet Carriers, 10 ; Cruisers, 3 ; Destroyers, 10 ; and Frigates, 2. Of these the following will have been launched by 31st March, this year :—

1 Fleet Carrier—H.M.S. "Eagle," ex- "Audacious," (Harland and Wolff).

8 Light Fleet Carriers—H.M.S.'s "Terrible" (Devonport) ; "Magnificent" (Harland and Wolff) ; "Powerful" (Harland and Wolff) ; "Majestic" (Vickers Armstrong) ; "Leviathan" (Swan, Hunter and W. Richardson) ; "Hercules" (Vickers Armstrong) ; "Centaur" (Harland and Wolff) ; "Albion" (Swan, Hunter and W. Richardson).

3 Cruisers—H.M.S.'s "Defence" (Scotts) ; "Tiger" (John Brown) ; "Blake" (Fairfield).

2 Destroyers—H.M.S.'s "Alamein" and "Broadwood."

2 Frigates—H.M.S.'s "Morecambe Bay" and "Mounts Bay."

The fleet carrier "Leviathan" is being preserved in an incomplete state at Portsmouth.

During the current year, seven Battle class destroyers and seven "A" class submarines have been accepted from the contractors.

The Parliamentary Secretary of the Admiralty—Mr. John Dugdale, in presenting the Estimates to the House of Commons on 8th March, said the principle acted upon in making the big reduction indicated is to see that so far as possible the Navy is kept fit and ready for expansion should the need arise.

There had been considerable development in frigates and in destroyers. Our 24 newest destroyers have an armament comparable to pre-war light cruisers. Our frigates, though not as useful as pre-war destroyers against surface craft, are in fact more useful against submarines.

The Home Fleet will proceed on a cruise this Autumn to the West Indies, leaving the United Kingdom towards the end of September and returning at the beginning of December. It will probably consist of the "Duke of York" (Flagship of the Commander-in-Chief, Home Fleet), the 3rd Aircraft Carrier Squadron, the 2nd Cruiser Squadron, two flotillas of destroyers and the Fleet replenishment ship. During this cruise some ships will leave the main Fleet and pay a visit to South Africa.

The Mediterranean Fleet has remained virtually at full strength. In the task of controlling illegal Jewish immigration, the skill, determination and humanity of those taking part has been amply shown by the success which has attended the Palestine Patrol.

A very large proportion of the Estimates is being devoted to research—£9 million, as compared with £700,000 in 1934, an average pre-war year. A substantial part of our research is concerned with the effects of the atom bomb. The question of the protection of the crew against the heat and radioactive effects is particularly important. We are taking action to reduce risk by enclosing bridges, gun mountings and other superstructure ; in fact, we are considering whether some of this superstructure cannot be abolished altogether.

Development is proceeding with the "snort"—the means for British submarines to take in air for running engines and to provide fresh air for the crew when the vessel is submerged to periscope depth. The most interesting of recent trials was that of H.M.S.

"Alliance." Her course under water took her from a point 100 miles South of the Canaries down to the Equator and back to Freetown—a distance of over 3,000 miles, during which she remained totally submerged. The "Ambush" had gone to the Arctic to investigate conditions in that part of the world and so see how far is it possible to travel submerged in Arctic waters.

Investigation of alternative methods of submarine propulsion is proceeding satisfactorily. Another item of research is into the development of the gas turbine engine. If successful, this new method of propulsion may drive the steamship off the sea and make it as out of date as the sailing ship.

Since VE-Day we have taken in, including National Service men, no fewer than 125,000, the majority of whom were quite untrained. Regular recruitment is most satisfactory.

Out of a Navy of 145,000, we have to-day under training, employed as instructors or associated with training, no fewer than 33,000 officers and men—nearly a quarter of the entire Navy.

From September next there will be a new system of entry for officers. Boys will enter at 16, and be given absolutely free maintenance and tuition, thus, for the first time in British naval history, removing from officer selection any possible bias in favour of the rich. The number of applications for entry to Dartmouth last September under the old system was 132. This year, for the first entry at 16, there are 514 applications for only 29 vacancies.

It has been decided that Commissioned Warrant Officers shall in future rank equal with Sub-Lieutenants instead of with Acting Sub-Lieutenants. In future, all Warrant Officers are to be regarded as having full Wardroom status, and the Warrant Officers' mess, as such, will be abolished.

Mr. Dugdale concluded with a reference to naval development in the Dominions. Many other members of the Commonwealth now have fleets of no mean stature.

### ROYAL MARINES

**RETIREMENT.**—The following was announced in the *London Gazette* on 9th March:—

Lieutenant-General Sir Robert G. Sturges, K.B.E., C.B., D.S.O., to Retired List (10th June, 1946).

**PROMOTION AND RETIREMENT.**—The Admiralty on 5th March announced the following:—

Major-General A. R. Chater, Commanding the Chatham Group, to be placed on the Retired List, from 7th April.

Colonel R. A. R. Neville, Commandant, R.N. School of Music, to be promoted Major-General, from 7th April.

**ROYAL MARINES BILL.**—Moving the Second Reading of the Royal Marines Bill in the House of Commons on 30th January, the Parliamentary Secretary, Admiralty—Mr. Dugdale, said the details of training with a view to increasing the reserves available to the Royal Marines on mobilization had not yet been worked out, but they thought it would be better to have daily rather than week-end training. The idea, which may be subject to alteration, is to have about two hours a week training in the evening and fourteen days a year, either by sea or land, or possibly both. At present, it was likely there would be 1,500 volunteers for a start—200 officers and 1,300 men.

**ROOSEVELT MEMORIAL.**—The Royal Marines were invited by the Pilgrims to perform the ceremonial duties at the unveiling of the Roosevelt Memorial in Grosvenor Square on 12th April. The Admiralty stated that this was the first complete ceremony to be carried out by the Royal Marines in London since 1935. In addition, President Truman provided a detachment of the United States Marine Corps from the United States Embassy guard. Marines were chosen because of the late President's Naval associations.

### ROYAL NAVAL VOLUNTEER RESERVE

**SUMMER TRAINING.**—Some officers and ratings in the R.N.V.R. have already done their Summer training in H.M.S. "Opportune," one of the Portsmouth destroyer flotilla, which took them on a cruise to Portland during the Easter holiday.

Others are getting sea experience in H.M.S. "Bulawayo," the fleet replenishment ship.

### DOMINIONS AND COLONIES

#### CANADA

**TRAINING EXERCISES.**—It was announced in Ottawa on 27th February that twelve ships of the Royal Canadian Navy were taking part in an extensive training programme to provide sea experience for more than 3,000 reserve forces, and to make it possible for service men to obtain advancement in specialized branches. Some of these ships took part in the exercises with the America and West Indies Squadron of the Royal Navy referred to elsewhere.

**NEW CARRIER.**—The aircraft carrier, H.M.C.S. "Magnificent" was commissioned for the Royal Canadian Navy at Belfast on 7th April by Commodore H. G. De Wolf, R.C.N., with officers and men from the carrier "Warrior," which has been returned to the Royal Navy.

#### INDIA

**COMMAND.**—The Government of India and the Admiralty announced on 12th April that the King has approved the appointment of Vice-Admiral W. E. Parry to be Chief of Naval Staff and Flag Officer Commanding, Royal Indian Navy, in succession to Rear-Admiral J. T. S. Hall, the appointment to take effect in July.

**SLOOP AT PORTSMOUTH.**—The sloops "Kistna" and "Cauvery" left Portsmouth on 2nd February to return to India after bringing to England a ship's company to take over H.M.S. "Achilles," which is being transferred to the Indian Navy.

#### NEW ZEALAND

The Minister of Defence of New Zealand has announced that, after consultation with the Admiralty, it had been decided to maintain in commission one cruiser, at present in a training capacity, and a flotilla of six anti-submarine escort vessels fully operational; also one surveying vessel in constant employment. Additionally one cruiser will be held in reserve in New Zealand together with Minesweepers and Harbour Defence craft. The anti-submarine escort vessels recommended by the Admiralty are "Loch" class frigates and six of these ships were being secured, together with a seventh vessel of similar size to be fitted out for permanent surveying duties. The frigates selected will be named after New Zealand Lakes.

#### PAKISTAN

**BRITISH OFFICERS ENGAGED.**—The Karachi Correspondent of *The Times* reported on 14th March that twenty-one British officers had been retained for service with the Royal Pakistan Navy. Rear-Admiral J. W. Jefford had been engaged for three years as Commander of the Navy and other officers would be employed for periods of one to three years. There is a Captain, an Acting Captain, four Acting Commanders, six Acting Lieutenant-Commanders, seven Lieutenants and an electrician officer.

#### SOUTH AFRICA

**TRISTAN AND MARION ISLANDS.**—A frigate of the South African Naval Forces returned in January from a periodic visit to the meteorological station on the island of Tristan da Cunha. She brought back six islanders who have volunteered for service on Marion Island as boatmen and general handymen. Fourteen South Africans were recently left to occupy this new South African possession pending the arrival of a larger party with supplies for the establishment of a meteorological station. The South African coaster "Pequena" visited Tristan da Cunha in February with an expedition to survey the possibility of establishing a fishery industry on the island.



## FOREIGN

## BURMA

FRIGATE.—The "Fal"—a "River" class frigate of 1,370 tons, completed in 1943, has been transferred to the Burma Navy.

## CHINA

The British cruiser, H.M.S. "Aurora," is being transferred to China. Early this year she made a short cruise in the Channel with a partly British and partly Chinese crew in order to familiarize the latter with the ship. The destroyer "Mendip" is also to be taken over by the Chinese Navy.

## ITALY

DISPOSAL OF THE FLEET.—The details of the Allocation of Units of the Italian Fleet, agreed upon by the Four Powers, have now been made public in a White Paper (Cmd. 7323). The various units are disposed of as follows:—

*Great Britain.*—1 battleship (the "Vittorio Veneto"); 2 submarines; 8 M.T.B's.; 3 landing craft; 14 auxiliaries.

*United States.*—1 battleship (the "Italia"); 2 submarines; 8 M.T.B's.; 3 landing craft; 12 auxiliaries.

*Soviet Union.*—1 battleship (the "Giulio Cesare"); 1 6-in. cruiser; 3 destroyers; 3 torpedo-boats; 2 submarines; 10 M.T.B's.; 3 vedettes; 3 landing craft; 19 auxiliaries.

*France.*—3 small cruisers; 1 sloop; 4 destroyers; 2 submarines; 6 M.T.B's.; 3 vedettes; 5 landing craft; 18 auxiliaries.

*Greece.*—1 6-in. cruiser; 1 auxiliary.

*Yugoslavia.*—3 torpedo-boats; 7 minesweepers; 2 landing craft; 5 auxiliaries.

*Albania.*—1 gunboat.

It is understood that the two battleships assigned to Britain and the United States and some of the smaller craft are to be scrapped in Italy.

Before the Soviet Union's quota is transferred, that Power has to return the British battleship—ex-H.M.S. "Royal Sovereign," seven American built destroyers and three submarines lent by this Country during the War; also the U.S. cruiser "Milwaukee." These ships will then be scrapped.

Italy has been allowed to retain the old battleship "Caio Duilio," two 6-in. cruisers, and some destroyers, torpedo boats, and corvettes; but no submarines.

The Four Powers have agreed that Italy may convert to scrap the submarines which under the Peace Treaty she was required to sink.

## NETHERLANDS

AIRCRAFT CARRIER.—The British aircraft carrier, H.M.S. "Venerable," has been purchased by the Netherlands Government. She is replacing the escort carrier "Karel Doorman" (ex-H.M.S. "Nairana") lent by the Royal Navy.

## TURKEY

Four U.S. submarines, of the modern "Balao" class, are being transferred to Turkey under the Greek-Turkish Aid Act.

The Turkish Navy has already been reinforced by the purchase from America of seven minesweepers.

## UNITED STATES

NEW AIRCRAFT CARRIER.—Provision is made in the current building programme for an aircraft carrier of 60,000 to 80,000 tons, capable of carrying all, except possibly the very largest, types of aircraft.

MODERNIZATION OF THE "MIDWAY."—Alterations, which it is reported are to cost a million dollars, are to be carried out in the fleet carrier "Midway." These are chiefly designed to enable her to carry larger aircraft.

The "Midway" has been replaced in the American Mediterranean Fleet by the "Philippine Sea."

## ARMY NOTES

### GREAT BRITAIN

#### H.M. THE KING

The King (Colonel-in-Chief) visited the Depot of the Royal Berkshire Regiment at Reading on 7th April.

The King and Queen visited Aldershot on 14th April and attended the Army Football Cup Final at the Command football ground. The Duke and Duchess of Gloucester were also present at the Final.

The Princess Elizabeth (Duchess of Edinburgh), as Colonel-in-Chief, inspected the 16th/5th Lancers at Lulworth Camp on 5th February. On 16th March, as Colonel, Grenadier Guards, she visited the Guards' Depot, Caterham, and inspected the 2nd Battalion, Grenadier Guards.

The Princess Margaret visited Glasgow on 16th March and, as Colonel-in-Chief, accepted the Freedom of the City on behalf of the Highland Light Infantry.

The Princess Royal (Colonel-in-Chief) inspected the 1st Battalion, The Royal Scots, at Glencorse, Midlothian, on 24th February. Next day she visited A.T.S. Signals unit camps in the Edinburgh area and the Lowland Brigade's training centre at Draghorn, Ayrshire.

The King has approved the following appointments :—

TO BE AIDE-DE-CAMP GENERAL TO THE KING.—General Sir John T. Crocker, K.C.B., K.B.E., D.S.O., M.C. (30th January, 1948).

TO BE AIDE-DE-CAMP TO THE KING.—Colonel (temporary Major-General) R. G. Lewis, C.B., C.B.E. (19th December, 1947).

TO BE HON. DENTAL SURGEONS TO THE KING.—Colonel G. ap G. Jones, late R.A.D.C., and Lieutenant (temporary Colonel and local Brigadier) R. A. Broderick, D.S.O., M.C., T.D., M.B., M.D.S.—R.A.D.C. Emergency Commission—(both dated 5th December, 1947).

TO BE COLONELS COMMANDANT.—Of the Royal Horse Artillery, Lieut.-General Sir Charles W. Allfrey, K.B.E., C.B., D.S.O., M.C. (7th January, 1948); of the Royal Signals, Major-General W. R. C. Penney, C.B., C.B.E., D.S.O., M.C., and Colonel (hon. Major-General) C. W. Fladgate, C.B.E. (22nd December, 1947).

TO BE COLONELS OF REGIMENTS.—Of The Manchester Regiment, Colonel (hon. Major-General) E. B. Costin, D.S.O. (8th January, 1948); of The Royal Fusiliers, Major (hon. Major-General, T.A.) J. F. Harter, D.S.O., M.C. (1st January, 1948); of The Sherwood Foresters, Colonel (temporary Brigadier) P. N. White, C.B.E. (9th November, 1947); of The Gordon Highlanders, Lieut.-Colonel (hon. Colonel) W. J. Graham, M.C. (2nd April, 1948); of The Royal Leicestershire Regiment, Lieut.-Colonel (hon. Brigadier) H. S. Pinder, C.B.E., M.C. (1st May, 1948).

#### ARMY COUNCIL

The King was pleased by Letters Patent under the Great Seal bearing date 2nd February, 1948 to appoint the following to be His Majesty's Army Council :—

The Right Hon. Emanuel Shinwell—President.

Captain R. M. M. Stewart—Vice-President.

Field-Marshal Viscount Montgomery of Alamein, K.G., G.C.B., D.S.O.

Lieut.-General Sir James S. Steele, K.B.E., C.B., D.S.O., M.C.

Lieut.-General Sir Sidney C. Kirkman, K.B.E., C.B., M.C.

Lieut.-General G. W. R. Templar, C.B., C.M.G., D.S.O., O.B.E.

Lieut.-General K. N. Crawford, K.C.B., M.C.

Sir Eric B. B. Speed, K.C.B., K.B.E., M.C.

## APPOINTMENTS

WAR OFFICE.—Major-General C. M. Smith, C.B., C.B.E., M.C., has been appointed Director of Supplies and Transport (1st March, 1948).

Major-General S. B. Rawlins, C.B., C.B.E., D.S.O., M.C., has been appointed Director of Royal Artillery (May, 1948).

Major-General A. D. Campbell, C.B.E., D.S.O., M.C., is to become Engineer-in-Chief, War Office (September, 1948).

Professor F. J. M. Stratton, D.S.O., O.B.E., T.D., D.L., F.R.S., has accepted an appointment as Deputy to the Scientific Advisor to the Army Council.

Brigadier H. M. Whitty, C.B., C.B.E., is to become Inspector, R.A.S.C., War Office, with the temporary rank of Major-General (July, 1948).

Brigadier G. T. W. Horne, C.B.E., R.A.O.C., has been appointed Director of Ordnance Services, War Office, with the temporary rank of Major-General (April, 1948).

UNITED KINGDOM.—Major-General J. Y. Whitfield, C.B., D.S.O., O.B.E., has been appointed Chief of Staff, Northern Command (March, 1948).

Brigadier G. P. Walsh, C.B., C.B.E., D.S.O., is to be Chief of Staff, Southern Command, with temporary rank of Major-General (June, 1948).

Major-General C. E. N. Lomax, C.B., C.B.E., D.S.O., M.C., is to become President of the R.M.A., Sandhurst Selection Board with effect from August, 1948.

MALAYA.—Major-General C. H. Boucher, C.B., C.B.E., D.S.O., has been appointed Commander, British Gurkha Division (January, 1948).

WEST AFRICA.—Major-General C. G. G. Nicholson, C.B., C.B.E., D.S.O., M.C., is to become G.O.C. West Africa (August, 1948).

M.E.L.F.—Major-General A. M. Cameron, C.B., M.C., is to become Major-General i/c Administration, Middle East Land Forces (September, 1948).

Brigadier W. M. Broomhall, D.S.O., O.B.E., is to become Chief Engineer and Director of Works, with the temporary rank of Major-General (July, 1948).

B.A.O.R.—General Sir Brian Horrocks, K.B.E., C.B., D.S.O., M.C., on 2nd April took over his new post as Commander, British Army of the Rhine, *vice* General Sir Richard McCreery, who has been appointed British Army representative on the Military Staff Committee of the United Nations.

General Horrocks had to relinquish his appointment owing to ill-health, and Lieut.-General Sir Charles F. Keightley, K.B.E., C.B., D.S.O., was appointed in his stead (26th April, 1948).

## PROMOTIONS

The following promotions have been announced :—

*General.*—The following Lieut.-General to be General :—Sir Richard L. McCreery, K.C.B., K.B.E., D.S.O., M.C. (30th January, 1948, with seniority 4th October, 1946).

*Lieut.-Generals.*—The following Major-Generals to be Lieut.-Generals :—Sir Charles F. Keightley, K.B.E., C.B., D.S.O. (30th January, 1948, with seniority 1st October, 1946) ; N. Cantlie, C.B., M.C., M.B., F.R.C.S., K.H.P. (1st April, 1948) ; G. W. R. Templer, C.B., C.M.G., D.S.O., O.B.E. (5th April, 1948, with seniority 1st August, 1946).

*Major-Generals.*—The following Colonels (temporary Major-Generals) to be Major-Generals :—E. M. Bastyan, C.B., C.B.E. (26th January, 1948, with seniority 13th April, 1946) ; H. Murray, C.B., D.S.O. (30th January, 1948, with seniority 23rd October, 1946) ; J. J. Magner, M.C., M.B. (1st March, 1948).

The following Colonels (temporary Brigadiers, Brigadiers or acting Major-Generals) to be temporary Major-Generals :—C. D. Packard, C.B.E., D.S.O. (8th January, 1948) ; C. de L. Gaussen, M.C. (1st November, 1947) ; A. G. Salisbury-Jones, C.B.E., M.C.

(3rd May, 1947); H. Williams, C.B.E. (1st January, 1948); C. B. Robertson, C.B.E., M.C. (1st November, 1947); G. K. Bourne, C.B.E. (1st November, 1947); E. C. Herbert, C.B., C.B.E., D.S.O. (1st November, 1947); J. F. D. Steedman, C.B.E., M.C. (1st November, 1947); V. Blomfield, C.B., D.S.O. (1st November, 1947).

#### RETIREMENTS

The following General Officers have retired:—Major-General R. C. Reynolds, C.B., O.B.E., M.C. (20th January, 1948); General Sir Richard N. O'Connor, G.C.B., D.S.O., M.C., A.D.C. Gen. (30th January, 1948); Major-General E. A. Sutton, C.B., C.B.E., M.C., K.H.S., late R.A.M.C. (1st March, 1948); Major-General G. C. Bucknall, C.B., M.C., with honorary rank of Lieut.-General (4th March, 1948); Lieut.-General Sir Frederick A. M. Browning, K.B.E., C.B., D.S.O. (5th April, 1948).

#### DESPATCHES

**HONG KONG.**—A Despatch submitted to the Secretary of State for War on 21st November, 1945, by Major-General C. M. Maltby, M.C., late G.O.C. British Troops in China, describing operations in Hong Kong from 8th to 25th December, 1941, was published in the *London Gazette* of 29th January, 1948.

**AFRICA.**—A Despatch submitted to the Secretary of State for War on 23rd May, 1947, by Field-Marshal the Viscount Alexander of Tunis, K.G., G.C.B., G.C.M.G., C.S.I., D.S.O., M.C., former Commander-in-Chief the Middle East Forces and Eighteenth Army Group, was published in the *London Gazette* of 5th February, 1948.

The Despatch deals with the African Campaign from El Alamein to Tunis—from 10th August, 1942, to 13th May, 1943.

**SICILY.**—A Despatch submitted to the Secretary of State for War on 9th October, 1946, by Field-Marshal the Viscount Alexander of Tunis, K.G., G.C.B., G.C.M.G., C.S.I., D.S.O., M.C., former G.O.C.-in-C., Fifteenth Army Group, describing the conquest of Sicily from 10th July, 1943, to 17th August, 1943, was published in the *London Gazette* of 10th February, 1948.

**MALAYA.**—A Despatch submitted to the Secretary of State for War on 25th April, 1946, by Lieut.-General A. E. Percival, C.B., D.S.O., O.B.E., M.C., formerly General Officer Commanding Malaya, describing operations of the Malaya Command from 8th December, 1941, to 15th February, 1942, was published in the *London Gazette* of 26th February, 1948.

**BURMA.**—A Despatch submitted to the Secretary of State for War on 14th July, 1942, by General Sir Archibald P. Wavell, G.C.B., C.M.G., M.C., A.D.C., Commander-in-Chief, India, describing operations in Burma from 15th December, 1941 to 20th May, 1942, was published in the *London Gazette* of 11th March, 1948.

#### ARMY ESTIMATES

In his review of the Army Estimates in the House of Commons on 9th March, Mr. Shinwell, Secretary of State for War, said that the Estimates were based on the two main assumptions that overseas commitments were likely to continue for some time and that it would be foolish not to take precautions to safeguard our interests at home and abroad.

An opinion was held in some quarters that the discovery of modern and more deadly weapons of warfare had destroyed the value of the Army. That was a fallacy. Scientists might have produced weapons of mass destruction, but none which so far obviated the need for fighting on land. The idea that in a future war all that was required was to press a button, and that land forces were superfluous, was not supported by any evidence in the possession of his department, and it might prove dangerous to rely upon any such assumption.

Provision had been made for a maximum of 850,000 officers and other ranks on April 1st this year, including those in the women's services. Deducting about 132,000 who



would have left the Army on release, and Colonial, Polish, and Gurkha troops, the true size of the British Army would be 527,000. In a year's time the figure would be down to 339,000. During the year it was expected to recruit 132,000. Of every five men and women now serving, three would have left in a year's time.

During the war there was little recruitment for the Regular Army, and to make good the deficiency they had set themselves an annual target of about 48,000. In the last year the number of recruits on normal Regular engagements was 28,000. This was about the average annual number of volunteers in the Regular Army between the wars, but 13,000 came forward under the short service scheme, making a total of 41,000—2,000 more than in 1938, the best recruiting year before the War. When it was remembered that at present there was hardly any unemployment, the results from the Army standpoint must be considered as satisfactory.

Since the end of the War in Europe 2,645,000 officers and men had been released. This year would see the end of demobilization, and they must now review the position and look to the future. The situation after the first world war was not a safe guide. The pace and character of war had undergone a vast change in the last quarter of a century. The withdrawal of the British Army from India, alongside essential changes in organization, demanded a complete review of organization and military plans. It had been necessary to reduce the number of battalions of infantry, and also to make reductions in the size of units of other fighting arms, notably the Royal Armoured Corps and the Royal Artillery.

By March 31st, 1949, they hoped to build up the Regular Army (excluding the national service men) to a figure of about 200,000 all ranks, and during the next 12 months there must be a continuous process of reshuffling before the Army as a whole could settle down into what was likely to be its ultimate form. The first principle was that they must not impair the quality of the Regular Army. If this was not of the finest quality they could not expect the national service man during his active service or in the reserve to reach the proper degree of efficiency.

They had also to produce a Territorial Army composed of trained and disciplined men who had served for twelve months with the Colours. It must be admitted that the Territorial Army was not fit for battle at the outbreak of war. Many of the essentials of leadership and training were lacking. But in the future, should war occur, we could not hope to gain a breathing space in which to build up and train our land forces. The shock would be sharp and sudden. Consequently, a steady flow of trained and disciplined men was required for the Territorial Army, to increase its state of readiness and general efficiency.

There were two other objectives transcending the rest: one, to give the finest training possible to the national service men during their twelve months' service with the Colours; and the other, which could only be achieved gradually, to have available a small but efficient and properly equipped Regular force ready to proceed overseas at short notice in peace-time. They intended that this force, composed solely of Regular soldiers, should not be so tied up with the Territorial Army or with the national service men that it failed to carry out this primary task.

Therefore, in place of the old system, they had adopted the conception of a national army composed of three constituent parts: a Regular content, a national service element, and those who volunteered for service with the Territorial Army. Those three parts must be balanced and, in this way, form the national Army of Britain. Without the long-service Regular soldier they could not fulfil their obligations. The national service men would be essential to provide a substantial part of our overseas commitments, because the Regular content was inadequate for this purpose. They would also provide the bulk of the trained men who, after their year of service, would flow into the Territorial Army.

But neither the Regular soldiers nor the national service men serving with the Colours were sufficient by themselves to provide for the anti-aircraft or land defences of the United Kingdom. Adequate forces could only be found on a part-time or Territorial

basis, but if they were to be ready to defend the country at short notice their peace-time organization and training must be put on a more efficient footing than was considered acceptable before the last war. Moreover, should we again be threatened by attack on our cities and industries by weapons of mass destruction it was essential that the maximum number of men should have undergone some training to enable them to take their part in civil defence.

Should another conflict unhappily arise, the Territorial Army must, on the outbreak of war, be able to provide for the bulk of the anti-aircraft and coast defences of the United Kingdom and the necessary reinforcement for the defence of ports and airfields overseas, together with a field force properly balanced and complete with all modern technical units for service wherever it may be required. It would be essential to have a large element of enthusiastic volunteers to supply the leaders and instructors, all of whom could not be found from the small Regular Army, and the Territorial Army must be assured of the greatest possible degree of co-operation to ensure that training was well organized and adequate. The vital date was January, 1950, when the first national service men with a reserve liability would start the flow of trained men into the Territorial Army.

The Army in future, because of the introduction of national service, would be larger than before the last war and must include, as a new feature, an anti-aircraft element dispersed in centres where there were no permanent barracks. The peak numbers of the Territorial Army, which would be reached about 1954, would be far in excess of anything known before the war.

#### BRIGADIER TO BE SUBSTANTIVE RANK

The substantive rank of Brigadier has been introduced with effect from 1st November, 1947. Previously this rank could only be held by appointment as a temporary or acting rank and the highest substantive rank below Major-General was that of Colonel. The new rank, therefore, will be a further grade between the substantive ranks of Colonel and Major-General in the promotion scale.

#### ARTILLERY SCHOOL DISPLAY

The following report from their Military Correspondent appeared in *The Times* of 18th March.

"The School of Artillery, Larkhill, gave a demonstration on 16th March to cadets of the Royal Military Academy, Sandhurst.

"The demonstration was in two parts. In the morning there was a display of equipment, from the 20mm. self-propelled gun firing a 4½ oz. projectile at the rate of 450 rounds a minute to the standard medium equipment, the 5.5 in. gun firing a shell of 100 lb. or 80 lb. to a range of 16,000 or 18,000 yards. In between came the 40 mm. S.P. gun (Bofors), the six-pounder towed by jeep as used by airborne forces, the 75 mm. howitzer, also towed by jeep but alternatively a pack weapon, the 17-pounder towed and also mounted on a Valentine chassis as an S.P. gun, the 25-pounder towed or mounted as an S.P. gun (known in this case as the 'Sexton'), and the 4.2 in. mortar, formerly an infantry weapon but taken over by the artillery since the abolition of support battalions. The 3.7 in. heavy anti-aircraft gun on mobile mounting was represented.

There were also to be seen the 7.2 in. howitzer and the gigantic American 240 mm. howitzer, firing a 360 lb. shell to a range of 25,250 yards. Both were fired and the quick-eyed caught a glimpse of the bigger shell in the air.

The afternoon part of the demonstration was to illustrate fire support. To demonstrate radio-telephony drill and adjustment of fire a whole regiment of 25-pounders concentrated on a target chosen by a spectator, a brilliant piece of close and accurate shooting. A concentration of 3.7 in. A.A. guns showed these weapons in a ground role and revealed their rapidity of fire. R.A.F. fighter-bombers and cannon and rocket-firing fighters showed how artillery, firing coloured smoke, can mark target areas for the

air arm. The opening moments of a fire plan were shown, with seventy-two guns in action at once.

"A helicopter ranging artillery almost 'stole the show,' especially when, after manoeuvring and hovering a few feet above the ground in a high wind, it came to rest on a marked piece of ground about equal in extent to a good-sized dining table. This is an experiment. Some thought it would be suicidal, but the same thing was once said of the Air O.P. (also represented) and proved untrue. The helicopter would, however, be more plainly visible from above and probably slower in landing."

#### THE BRITISH GURKHA DIVISION

It was announced some time ago (see issue of this JOURNAL of November, 1947, page 620), that the 2nd, 6th, 7th and 10th Gurkha Rifles had been allotted for service under His Majesty's Government; also, that all the other Gurkha regiments of the old Indian Army were to become part of the Army of the new Dominion of India.

In February, 1948, the War Office issued further information regarding the Gurkha units which are now part of the British Army. These four Gurkha regiments, each of two battalions, are now amalgamated into a Corps entitled The Gurkha Regiment. The regiments are retaining their old numbers and titles; thus, the 2nd Gurkhas will be known as the 2nd King Edward VII's Own Gurkha Rifles, The Gurkha Regiment. All four Gurkha regiments will retain their distinguished regimental Colonels—Lieut.-General Sir F. Tucker, Field-Marshal Lord Birdwood, General Sir William Slim and General Sir Philip Christison.

The new British Gurkha Division will be stationed in the Far East—Malaya and Hong Kong.

The Division will contain a British element and supporting arms and services. Each infantry brigade will comprise one British and two Gurkha battalions. The British units to start with the Division are The Buffs, The King's Own Yorkshire Light Infantry, The Seaforth Highlanders, and the 26th Field Regiment, Royal Artillery. The 7th Gurkha Rifles are to be converted into artillery.

The supporting arms and services of the Division will contain in the initial stages a high percentage of specialist officers and N.C.O's from the British Army. The "other ranks" of the services (such as the R.A.S.C., and R.A.O.C.) will be recruited from Malays and Chinese to be enlisted and trained in Malaya.

#### OFFICERS

Officers for The Gurkha Regiment will consist of:—

(a) Senior British officers with previous experience in Gurkha regiments who will serve under contract for three years and then retire.

(b) British officers, formerly of the Indian Army, who will belong to the Gurkha Regiment and who will make service therein their career.

(c) British officers attached to the Gurkha Regiment from the British Army for specific periods.

Category (c) will ultimately supersede categories (a) and (b).

(d) A new class of Gurkha officer is being temporarily introduced, i.e., Gurkha Lieutenant, Gurkha Captain and Gurkha Major, to exercise the same command as their British equivalent ranks. These will count against the establishment of eighteen British officers in a battalion and will cater for the aspirations to full commissioned rank of the best of the Viceroy commissioned officers (V.C.O's.).

(e) Gurkha officers holding Viceroy's Commission as at present. These will be gradually "wasted out" and replaced by warrant officers.

Ultimately, it is planned to replace category (d) by Gurkhas who have been to the Royal Military Academy, Sandhurst, and who will thence go to The Gurkha Regiment as officers.



## OTHER RANKS

The Gurkha other ranks come on a four-year contract, which includes six months leave in Nepal after three years in the Far East. They may bring their families with them. They earn a pension after sixteen years. Their pay is the same as for their equivalent ranks in the Army of India (a clause of the Tripartite Agreement reached between H.M. Government, the Government of India and the Kingdom of Nepal), but their overseas service is compensated by a special allowance.

It is proposed to continue the recruiting organization on the same lines as hitherto, but to move the depots of H.M. Government across the border into Nepal, and the Maharaja has agreed to this innovation.

The line of communications will extend from Nepal via the railway line to Calcutta and thence by sea to Singapore.

Recruiting for the new Gurkha Regiment is reported to be most satisfactory.

## MISCELLANEOUS

**A.T.S. COMMISSIONS.**—In February, the War Office announced a new scheme for women to join the A.T.S. to train for Commissions. Conditions are similar to those for entry into the R.M.A. Sandhurst. Women must be aged over 18½, and possess School Certificate standard or higher educational qualifications. They must also be recommended by the Principal of their school or college. Candidates in civilian employment must have their employer's recommendation.

Candidates failing to reach the required standard during training can terminate their service if they wish, but they must serve for two years as officers if commissioned.

**W.R.A.C.**—It was announced on 13th February that the Royal Assent had been received to the proposal that the A.T.S. shall be designated the Women's Royal Army Corps.

**GIBRALTAR.**—On 7th March the Correspondent of *The Times* reported from Gibraltar as follows:—

"Regimental and company Colours of the Grenadier and Coldstream Guards were laid up at a ceremonial service here this morning. As part of a scheme to increase the historic associations of the four-century-old King's Chapel with the Army, all corps and regiments which took part in the capture of the Rock in 1704 and the subsequent counter-siege and the siege of 1779-83 have been invited either to lay up a stand of Colours or to present some fitting memorial. In addition to the Brigade of Guards, the Royal Artillery, the Royal Engineers, and eleven infantry regiments are to be asked to take part.

"The plan has received the warm approval of Princess Elizabeth, who, as Colonel, Grenadier Guards, wrote giving her permission to the Governor, Lieutenant-General Sir Kenneth Anderson. 'I think your idea is a most agreeable one,' she wrote. 'The Colours could not go into a more suitable place.'"

**ARMY ART SOCIETY.**—The Army Art Society, which held a most successful exhibition last year, when for the first time entries were accepted from artists of all ranks in the three Services, is organizing another display to be held next October at the Imperial Institute, South Kensington. The Honorary Secretary, Colonel L. N. Malan, of 2, Iverna Gardens, London, W.8, hopes that there will be an even larger display than last year, as there will be more room available. There must be still many people of artistic achievement, past or still serving, who can usefully contribute to the progressive improvement that the Society seeks to attain.

**HOUSEHOLD BRIGADE WAR MEMORIAL.**—When the Guards' Chapel at Wellington Barracks, destroyed during one of the first flying bomb raids, is rebuilt, a memorial to the officers and men of the Household Brigade who fell in the war will also be constructed. It will be in the form of a cloister and memorial entrance hall leading from Birdcage Walk to the West door of the Chapel.



In this cloister and hall there will be seven bays, and in each there will be a book of remembrance listing the 5,214 names of the officers and men of the two regiments of Household Cavalry and the five regiments of Foot Guards who were killed.

While most of the money will be subscribed by members of the Household Brigade, subscriptions from the public will be welcomed, and may be sent to the honorary treasurer, Household Brigade War Memorial Fund, Leconfield House, Curzon Street, W.1.

**ROYAL ARTILLERY IN THE TOWER.**—For the first time in history, an artillery unit took over guard duties in the Tower of London for three weeks commencing on 31st March. The detachment of the Royal Artillery comprised three officers and eighty men of the 98th Heavy Anti-Aircraft Regiment.

**THE KING'S OWN ROYAL REGIMENT.**—A memorial to all ranks of The King's Own Royal Regiment who gave their lives in the two world wars was unveiled and dedicated in the Regimental Chapel of Lancaster Priory and Parish Church on 3rd April.

**THE DEVONSHIRE REGIMENT.**—In memory of all ranks of The Devonshire Regiment who lost their lives in the War of 1939-45, a window in the Regimental Chapel of St. Edmund in Exeter Cathedral was dedicated on 3rd April by the Bishop of Exeter.

## DOMINIONS

### AUSTRALIA

**B.C.O.F.**—Since the beginning of this year the British Commonwealth Occupation Force in Japan has been administered and controlled by the Australian Government. Australian control was agreed to, subject to continued retention by all Governments of sovereign control of their own policy and full consultation when their interests were affected.

The Joint Chiefs of Staff Committee in Australia, which controlled the B.C.O.F., has been dissolved. Service representatives of other Governments will continue to be associated with Australian control for consultation and advice.

Earlier plans to recall the Australian component of B.C.O.F. by June have been abandoned because of expected delay in concluding the final Japanese peace treaty.

**UNIVERSITY REGIMENTS.**—University regiments will be raised at all Australian Universities when the Australian Citizen Military Forces are formed again. Recruiting will begin on 1st July. The new University regiments will be similar to the Senior Training Corps at the Universities of Great Britain.

**NEW TYPE OF ARMY UNIFORM.**—In April, the Minister for the Army, Mr. Chambers, announced the forthcoming issue of a new pattern uniform to members of the Permanent Army and Citizen Military Forces.

The new dress uniform is to be of high quality navy blue cloth and similar in design to the present uniform of the Royal Australian Air Force. The trousers have a broad scarlet stripe running the full length of the leg. The uniform will be worn with a white shirt, black tie, black boots and a peaked cap with scarlet band. This uniform will be worn on ceremonial and other formal occasions. It will not be in general use for at least a year, but officers and men on special duties in connection with the Royal visit next year will be given an early issue.

The new battle-dress will conform to the standard dress of all Imperial troops and will be in general issue to all troops, whether Permanent Army or Militia. The "Digger" hat is to be retained for the present, but replacement by another style is being considered.

## CANADA

### H.M. THE KING

The following appointments were announced in the *Canada Gazette* dated 13th December and 27th December, 1947:—

The King has been graciously pleased to consent to become Colonel-in-Chief of the Governor-General's Foot Guards and of The Canadian Grenadier Guards (1st December, 1947).

The Queen has been graciously pleased to consent to become Colonel-in-Chief of The Black Watch (Royal Highland Regiment) of Canada (1st December, 1947).

The Princess Elizabeth, Duchess of Edinburgh, K.G., C.I., has been graciously pleased to consent to become Colonel-in-Chief of La Regiment de la Chaudiere and of the 48th Highlanders of Canada (1st December, 1947).

The Duke of Gloucester has been graciously pleased to become Colonel-in-Chief of the Royal Canadian Army Service Corps (13th December, 1947).

### INDIA

**BRITISH DEPARTURE.**—The 1st Battalion, The Somerset Light Infantry—the last British unit to leave India—embarked at Bombay on 28th February. Simultaneously, British Force Headquarters, India, ceased to exist.

**NATIONAL CADET CORPS.**—On 14th March Sardar Baldev Singh, the Defence Minister, announced in the Dominion Parliament that military training will be given to the youth of India. Because of serious financial and technical limitations only 200,000 will be accepted at first, and enrolment will be voluntary unless the response is poor. The National Cadet Corps, as the new body will be called, will consist of three divisions: a senior division for the universities and colleges, in which the University Training Corps will be merged; a junior division for schools; and a girls' division.

### PAKISTAN

**BRITISH DEPARTURE.**—The 2nd Battalion, The Black Watch—the last British unit to leave Pakistan—sailed from Karachi on 26th February. Addressing the battalion before embarkation, the Governor-General (Mr. Jinnah) said:—

“I am sure that, though you are leaving Pakistan, the people of Pakistan and I will always have the best of goodwill for your nation.”

**NATIONALIZATION OF FORCES.**—On 12th March the Defence Minister, Mr. Liaquat Ali Khan, stated in the Pakistan Parliament that his Government proposed to nationalize the Army as soon as was consistent with general efficiency, but lack of suitable trained Pakistan personnel would necessitate the employment of Englishmen for some time to come, especially for the training of technicians.

At the moment 362 British officers and 34 others were employed by Pakistan. Of these, 63 would retire by the end of March. The War Office had been asked for the loan of 261 British officers, mostly for technical posts. Ultimately the Pakistan forces would have 560 British officers.

### FOREIGN

#### IRAQ

The British advisory military mission in Iraq is to be withdrawn with effect from 16th May.

### UNITED STATES

**NON-RELEASE OF OFFICERS.**—It was reported from Washington on 27th March that, because of the world situation, the U.S. Army has retained about 20,000 Reserve officers on active duty instead of releasing them, and has also rescinded a recent order to demobilize 4,200 over-age Reserve and temporary officers. All these men are still serving; there has been no recall of Reservists from civilian life.

**CHIEF OF STAFF.**—General Omar S. Bradley took over the post of Chief of Staff of the Army, in succession to General Eisenhower, on 7th February, 1948.

## AIR NOTES

### GREAT BRITAIN

#### H.M. THE KING

The King and Queen, accompanied by The Princess Margaret, visited the R.A.F. Station, Marham, on 6th February.

Air Commodore E. H. Fielden, Captain of the King's Flight, left on 26th March for Australia and New Zealand to inspect the airfields which are likely to be used during the Royal tour to those countries early in 1949.

#### THE DUKE OF GLOUCESTER

The Duke and Duchess of Gloucester arrived at the R.A.F. station, Negombo, Ceylon, on 8th February on their visit for the formal opening of the first session of Parliament since the Ceylon Independence Act came into operation. They travelled under the aegis of the King's Flight in the aircraft which the Duke used when in Australia.

#### APPOINTMENTS

The Air Ministry announced on 14th March that Air Chief Marshal Sir Roderic Hill is to retire from the Royal Air Force in June on the termination of his present appointment as Member of the Air Council for Technical Services. On 21st March, the governing body of the Imperial College of Science and Technology announced that it had appointed Sir Roderic to be Rector of the College as from 1st October, in succession to Sir Richard Southwell. Sir Roderic Hill, who is 54, has been Principal Air Aide-de-Camp to the King since May, 1946.

The Air Ministry announced on 6th April the appointment from August of Acting Air Marshal Sir R. Victor Goddard to the Air Council as Air Member for Technical Services, in place of Air Chief Marshal Sir Roderic Hill. Air Marshal Sir Victor Goddard has been Deputy Head of the Royal Air Force Delegation in the United States at Washington since April, 1946.

Air Marshal Sir Hugh S. P. Walmsley has been appointed Deputy Chief of the Air Staff, with effect from 4th February. He was previously A.O.C.-in-C., Air Forces in India, and in the New Year Honours List was created a K.C.I.E.—the first, and the last, R.A.F. officer to be thus honoured.

Air Vice-Marshal P. C. Livingston has been appointed Director-General of Royal Air Force Medical Services with acting rank of Air Marshal, in succession to Air Marshal Sir Andrew Grant, to date 1st March, 1948.

Air Vice-Marshal A. C. Stevens has been appointed Air Officer Commanding, British Forces, Aden.

Air Vice-Marshal J. W. Jones, C.B., C.B.E., has been appointed, as from 1st July, Air Officer Commanding-in-Chief, Technical Training Command, in place of Air Marshal Sir Ralph S. Sorley, K.C.B., O.B.E., D.S.C., D.F.C., who will retire from the Active List on completing his tour in this post.

Air Vice-Marshal G. E. Gibbs, C.I.E., C.B.E., M.C., has been appointed Royal Air Force Member of the Military Staff Committee, United Nations Organization, New York, in place of Air Chief Marshal Sir A. Guy R. Garrod, C.B.E., K.C.B., M.C., D.F.C., LL.D., who will retire from the Active List on completing his tour of duty in this post. The change was due to take place in May.

Air Vice-Marshal H. T. Lydford, C.B., C.B.E., A.F.C., has been appointed Commandant-General of the Royal Air Force Regiment and Inspector of Ground Combat Training, with effect from June 30th next.

Air Commodore L. G. Harvey has been appointed Air Officer Commanding, No. 24 Group, Technical Training Command, with the acting rank of Air Vice-Marshal, with effect from 15th January, 1948.

Air Commodore R. H. S. Spaight has been appointed Air Officer in Charge of Administration, Reserve Command, to date 18th February.

Group Captain Christopher Clarkson has been appointed Civil Air Attaché to the British Embassy in Washington, taking up his duties in mid-March.

Group Captain R. J. Bone has been appointed Civil Aviation representative of the United Kingdom in the Far East, and Civil Air Attaché to the British Embassies in Nanking and Bangkok, with residence in Hong Kong.

#### PROMOTIONS, RETIREMENTS, ETC.

*Grant of Acting Rank.*—Air Vice-Marshal Sir Arthur P. M. Sanders, K.B.E., C.B., is granted the acting rank of Air Marshal (8th December, 1947).

*Promotion—Medical Branch.*—Air Commodore P. C. Livingston, C.B., C.B.E., A.F.C., is promoted to Air Vice-Marshal (seniority, 30th June, 1947).

*Half Pay.*—Marshal of the Royal Air Force The Lord Douglas of Kirtleside, G.C.B., M.C., D.F.C. (18th February, 1948).

*Promotions and Retirements.*—Air Commodore D. F. Stevenson, C.B., C.B.E., D.S.O., M.C., is promoted to Air Vice-Marshal, 9th February, 1948, and placed on the Retired List, 10th February, 1948.

Air Commodore (temporary Air Vice-Marshal) H. K. Thorold, C.B., C.B.E., D.S.C., D.F.C., A.F.C., is promoted to the substantive rank of Air Vice-Marshal with effect from 7th September, 1947, and is placed on the Retired List with effect from 8th September, 1947.

#### HONOURS AND AWARDS

The barony conferred in the New Year Honours on Marshal of the Royal Air Force Sir William Sholto Douglas was gazetted on 17th February by the name, style, and title of Baron Douglas of Kirtleside, of Dornock in the County of Dumfries.

*Bar to D.F.C.*—The King has approved the award of a Bar to the D.F.C. to Acting Squadron Leader Frank William Marius Jensen, D.F.C., A.F.C., No. 8 Squadron, R.A.F.

#### PERSONNEL

*SERVICE IN GERMANY.*—The British Air Forces of Occupation in Germany (B.A.F.O.) has now been classified as an Oversea Command of the R.A.F. Men and women who complete a full term of service in that Command, or in independent formations in North-West Europe, will now be assured of a longer period of service in the United Kingdom before being posted overseas again.

*DIRECT RECRUITING.*—It was announced on 22nd January that, for the first time since the War, young men would be recruited direct from civil life as pilots and navigators in the R.A.F. They will sign on for five years Regular and four years Reserve service. All short service Commissioned Officers in the General Duties Branch will be chosen from among them, and opportunities for permanent Commissions will follow. The pre-war system of direct appointment to short service Commissions in the General Duties Branch is not to be resumed. Training will occupy about two years, and some Cadets will receive part of it in Southern Rhodesia. Though the upper age limit may be waived in certain cases, candidates must normally be between 17½ and 21, and up to school certificate standard. A gratuity of £200 will be paid, on their transfer to the Reserve, to those not selected for re-engagement to complete the time necessary to make them eligible for a pension or for short service Commissions.

*SCHOOL OF EDUCATION.*—A School of Education was opened in January at Wellesbourne Mountford, Warwickshire, to give specialist training to newly-appointed education



officers who, on completing the course, go to R.A.F. units at home and abroad to supervise the instruction of all ranks. The four-week course deals with the practice of teaching, the organization and administration of R.A.F. education, the part played by education in maintaining high standards of training and morale, and methods of discussing current affairs so that men and women throughout the R.A.F. will realise their duties and privileges as members of the Service and as citizens. It is intended to increase the Education Branch to 1,000, and also to recruit N.C.O.'s as education assistants.

**BATTLE OF BRITAIN WEEK.**—Battle of Britain Week in 1948 will be observed between 13th and 19th September. The Air Council has decided that Battle of Britain Day shall be 15th September. "At Home" Day, when R.A.F. stations are opened to the public, will be on Saturday, 18th September, and Battle of Britain Sunday on 19th September.

#### SPECIAL FLIGHTS

**BRITANNIA TROPHY.**—The Britannia Trophy, given annually for the most meritorious performance in British aviation, has been awarded to Squadron Leader H. B. Martin, pilot, and Squadron Leader E. B. Sismore, navigator, for their record flight from London Airport to Capetown in 21 hours, 31 minutes, 30 seconds on 30th April and 1st May, 1947.

**POLAR FLIGHT.**—Seven "Lancaster" aircraft of the Empire Air Navigation School at Shawbury, Shropshire, left on 17th February on a flight well into the Arctic Circle, within 900 miles of the Pole. They first went to Gibraltar, and on the 18th flew non-stop from there to Reykjavik, Iceland. From there they flew back to Kinloss, Morayshire, by way of Jan Mayen and Bear Islands, arriving on 22nd February. The aircraft carried 42 officers and 24 senior N.C.O.'s who are taking a specialist navigation course.

**FLIGHT TO SOUTH AFRICA.**—The "Lincoln" bomber "Crusader" took off from the Central Bomber Establishment at the R.A.F. station, Marham, on 17th February on the first stage of a flight to South Africa, the third it had made. Its crew of specialists were to lecture to units of the R.A.F.-Middle East Command and to the South African Air Force, stops being made at Nairobi, Bulawayo, Pretoria and Cape Town.

**MIDDLE EAST AND AFRICA TOUR.**—The "Lincoln" aircraft "Thor II", from the Empire Air Armament School at Manby, Lincolnshire, returned to its base on 28th February from a 15,000-mile tour of the Middle East, Aden, Southern Rhodesia, and East and West Africa. It carried armament specialists who discussed training, research and development with R.A.F. units in the various countries, and demonstrated the latest armament and radar devices.

**FAR EAST TOUR.**—The "Lincoln" aircraft "Aries II" left on 27th January on a tour of the Far East, visiting Air Headquarters, Malaya, at Tengah, and Air Command, Far East, at Changi. The objects of the flight were to demonstrate the latest navigational techniques and equipment and to lecture on and discuss current methods and practices of navigation.

**NEW "HASTINGS" TRANSPORT.**—A Handley Page "Hastings" aircraft, the latest, largest and fastest British military transport, left Radlett, Hertfordshire, on 10th March on a flight to Australia and New Zealand for tests under tropical and intensive flying conditions and to demonstrate the aircraft to the R.A.A.F. and R.N.Z.A.F. Mr. W. J. Jordan, High Commissioner for New Zealand, who was among those present to see the take-off, said that with things as they are in the Pacific, Australasia needed the most up-to-date aircraft and the visit of the "Hastings" would create much interest. The aircraft was under the charge of Squadron Leader H. G. Hazelden, the Handley Page chief test pilot, and the crew included representatives of the Ministry of Supply experimental establishment at Boscombe Down and of the R.A.F. Transport Command.

**AIR DEFENCE EXERCISE.**—"Lancaster" bombers from the R.A.F. stations at Stradi-shall and Upwood co-operated with "Mosquito" night fighters of No. 11 (Fighter) Group and Army units of No. 1 Anti-Aircraft Group in an air defence exercise over the southern half of England on the night of 1st-2nd April. The target for the bombers was Weymouth

Bay. They flew singly at about 18,000 feet, the first being due over Lowestoft at 9.30 p.m. The exercise lasted for four hours.

#### ORGANIZATION

**END OF 84 GROUP.**—No. 84 Group, one of the most famous of the war formations, was disbanded at the beginning of March. It was one of the three groups which made up the 2nd Tactical Air Force under Air Marshal Sir Arthur Coningham, and was formed at Cowley Barracks, Oxford, in June, 1943. A year later it played a prominent part in the operations over Normandy. One of its Wings, with "Tempest" aircraft, led by Wing Commander R. B. Beaumont, was transferred to the Kent coast when the flying bombs started to intercept them on their way to London. From August, 1944, when the group was fully established in France, it included seven wings, with Norwegian, Polish, Belgian and French squadrons. In the eleven months from D-day to the end of the War in Europe, 84 Group flew 90,089 sorties. Its casualties included 407 pilots killed.

**R.A.F. IN GREECE.**—On 28th January the Air Ministry stated that certain reports from Athens announcing the postponement of the "projected withdrawal from Greece of British Royal Air Force Squadrons" were misleading. The only R.A.F. units in Greece comprise a communication flight of six aircraft and a training mission to the Royal Hellenic Air Force. It had been hoped to reduce the communication flight, but continued commitments will not allow the reduction.

#### AUXILIARY AND RESERVE FORCES

**BADGES.**—All members of the R.A.F. Volunteer Reserve and the Royal Auxiliary Air Force are to be issued with pre-war silver lapel badges to wear with civilian clothes. The badge consists of a circle of about half-inch diameter, enclosing the letters R.A.F.V.R. or A.A.F., with an eagle at the base and surmounted by a crown. A new design for the Auxiliaries, taking account of the prefix Royal which was recently granted by His Majesty, may be considered later.

**RESERVE TRAINING.**—Recruiting began in February of R.A.F. and W.A.A.F. Volunteer Reserve pilots at four new Reserve flying schools, bringing the total to 17. These are at Redhill (Surrey), Filton (Bristol), Manchester and Grangemouth (Edinburgh). Recruiting for navigators and signallers also opened at four of the Reserve flying schools.

**AIR DEFENCE UNITS.**—The formation of seven new Air Defence Units of the Royal Auxiliary Air Force, providing opportunities for part-time service for both men and women, has increased the total of such units to 16. The seven units are:—

- No. 3507 (County of Somerset), at Chippenham,
- No. 3509 (County of Staffordshire), at Trentham, Stoke-on-Trent,
- No. 3602 (City of Glasgow), at R.A.F., Bishopbriggs, Glasgow,
- No. 3603 (City of Edinburgh), at R.A.F., Barnton Quarry, Edinburgh,
- No. 3608 (North Riding), at R.A.F., Thornaby-on-Tees,
- No. 3611 (West Lancashire), at R.A.F., Fazackerley, Liverpool,
- No. 3614 (County of Glamorgan), at R.A.F., Llandaff, Cardiff.

**AIR TRAINING CORPS.**—Camps for units of the Air Training Corps will be held at 43 R.A.F. stations in Britain during 1948. The large camps will take up to 300 Cadets, the smaller up to 100. The Cadets will attend camp for about seven days. Each party of 100 will have at least two A.T.C. officers in charge; in addition, there will be an A.T.C. camp commandant and camp adjutant, together with a R.A.F. liaison officer.

#### RECORD FLIGHTS

**ALTITUDE RECORD.**—Group Captain John Cunningham—chief test pilot of the de Havilland Aircraft Company, made an attempt on the world height record on 23rd March, using a "Vampire" fighter with a jet "Ghost" engine instead of the usual "Goblin". The Royal Aero Club announced next day that he reached 59,492 feet.

This, subject to confirmation, established an international height record for aircraft, the previous best being 56,017 feet, established by an Italian pilot in 1938.

#### AIR SPEED RECORD

A former R.A.F. Pilot—Mr. John Derry, set up a new air speed record for the 100 kilometres closed circuit course on the 12th April, 1948, when he flew a D.H.108 aircraft of the swept-back wing type at an average speed of 605.23 m.p.h. The highest speed recorded on the air speed indicator was 635 m.p.h. This speed was over 40 m.p.h. above the previous record set up by a Vickers Attacker jet fighter in February last.

The D.H.108 is still on the secret list, but it has been made known that it is powered by a De Havilland Goblin jet engine and has a span of 39 feet and is 24 feet 6 inches long.

This does not constitute a world speed record for a straight measured course. As reported in the JOURNAL for November, 1947, a U.S. naval aircraft B.558 (Skystreak) was flown four times over a three-kilometre course at an average speed of 650.6 m.p.h.

#### WOMEN'S ROYAL AIR FORCE

NEW TITLE.—In the House of Commons on 6th February, Mr. Alexander, Minister of Defence, moved the second reading of the Army and Air Force (Women's Service) Bill. He said the Bill gave effect to the decision of the Government in November, 1946, that the women's services would be continued on a voluntary basis to form a permanent feature of the armed forces, and that the A.T.S. and the W.A.A.F., with such changes in titles as might be necessary and proper to their altered status, would be incorporated in the Army and Air Force respectively.

On 13th February, in committee on the Bill, Mr. Shinwell, Secretary of State for War, announced that the Royal assent had been received to the proposal that the A.T.S. should be designated the Women's Royal Army Corps, and the Women's Auxiliary Air Force should be known as the Women's Royal Air Force. On the same day, the Air Ministry stated that although the new title had been announced, the old title would continue to be used until the women's regular service is formed and the present service is no longer regarded as an auxiliary service. The new name embodies the principle that the women's service is an integral part of the R.A.F., and not one of its auxiliaries. Other branches of the women's service will be the Women's Royal Air Force Reserve of Officers, the Women's Royal Air Force Reserve, the Women's Royal Air Force Volunteer Reserve, and the Women's Royal Auxiliary Air Force Reserve.

#### LOSS OF "STAR TIGER" AIRCRAFT

The British South American Airways "Tudor IV" aircraft "Star Tiger", with 25 passengers and a crew of six on board, was lost on a flight from the Azores to Bermuda on 30th January. The aircraft last reported its position in a routine wireless message as 380 miles North-East of Bermuda.

Among the passengers was Air Marshal Sir Arthur Coningham, K.C.B., K.B.E., D.S.O., M.C., D.F.C., A.F.C., who had retired from the R.A.F. at his own request on 7th November, 1947. During the War, Sir Arthur commanded No. 4 Group, Bomber Command; and from July, 1941, was with Lord Tedder in the Middle East Command, where he commanded the Desert Air Force in Libya. After the landing in North Africa, he commanded the North-West Africa Tactical Air Force, and afterwards the Tactical Air Forces in Sicily and Italy. Early in 1944 he took command of the 2nd Tactical Air Force, which operated with the British and Canadian Armies in the advance from Normandy into Germany.

On 26th February, Mr. Lindgren, Parliamentary Secretary, Ministry of Civil Aviation, announced in the House of Commons that the loss of the air liner would be the subject of a formal court investigation, such as was held into the loss of the airship R.101 in 1931. Lord Macmillan had agreed to hold the investigation, and would be assisted by such assessors as might be necessary.



## THE AIR ESTIMATES

The Air Estimates for 1948-49, issued on 23rd February, provide for an expenditure of £173,000,000, which is £41,000,000 less than the corresponding figure for 1947-48. The total includes £11,600,000 for terminal services and about £1,300,000 for the pay and maintenance of Poles awaiting repatriation or resettlement in civilian life. Provision for normal services thus amounts to £160,100,000.

The maximum number of officers, airmen, and airwomen to be maintained for service during 1948-49 is 325,000. This includes 53,000 on release leave, Dominion and Colonial Forces, and the Polish Resettlement Corps, and represents a reduction of 45,000 during the year.

An explanatory memorandum (Cmd. 7329) by the Secretary of State for Air—Mr. Arthur Henderson, states that at the end of the War the regular element of the Force numbered less than 40,000, but this figure had been raised to 100,000. Meanwhile, over 1,000,000 men and women had been released, and some 135,000 are being discharged during 1948. With the regular element only about 40 per cent. of the total Force, the emphasis must necessarily fall upon training, thus diminishing the effective strength of the Force and placing it under a severe strain.

Special attention (adds the memorandum) is being given to the training of the bomber force, in the realization that the existence of efficient striking forces is the Country's most effective safeguard against aggression. Great importance is attached to increasing the mobility of the Force and reducing its dependence on a widespread and elaborate base organization. "It is the aim of the Air Council to enable a substantial weight of air power to be developed at short notice in any area where it may be required". Work on this problem is progressing concurrently with planning the redeployment of the R.A.F. overseas, after the withdrawal of units from India, Pakistan and Burma and the decision of the Government to relinquish the mandate for Palestine.

The provision made for supply allows for a further re-equipment of fighter squadrons with jet-propelled aircraft and for a limited measure of re-equipment elsewhere. The Air Ministry's building programme has had to be cut to conform with national policy, and the bulk of new building has been allotted to married quarters, of which there is a severe shortage.

Introducing the Air Estimates in the House of Commons on 4th March, Mr. Henderson said they were now building the third R.A.F. The first was demobilized in 1919, the second had been undergoing demobilization since 1945. The task was to ensure that the third R.A.F. was erected on the basis of the technical skill, the flexible organization, and operational experience so highly developed in the second.

The Force must be a balanced one, able to fulfil both its defensive and offensive roles. There could be no hard-and-fast rule on what that balance should be. It had to be adjusted to keep pace with weapons and technique. A potential aggressor must be made to realize that if he started trouble he would be hit hard and at once. The other factor in the proper balance of the Force was that it must be so designed and trained that it could also operate effectively in co-operation with the Navy in the protection of our sea communications and with the Army in land operations.

Under present conditions expenditure on current production must necessarily be restricted. While they were still exploring fields opened up by the discoveries of the War—the guided missile, the gas turbine, and jet propulsion, to mention only the most obvious examples—it would be unwise to go into expensive large-scale production of types which would soon be out of date.

Our jet fighters—the "Meteors" and "Vampires", whose primary task was to defend this country from air attack, were the best in the World. Our lead in the development of jet engines was maintained.

The Air Council had deferred re-equipping our bomber force with jet bombers until the new jet engines with which future types were to be equipped had been fully proved.



The prospect of jet bomber aircraft of exceptional performance was in sight. Meanwhile, the re-equipment of our bomber squadrons with "Lincolns" would be completed this year.

By pre-war standards recruiting had been reasonably good—77,000 had entered since 1st January, 1946—but it was by no means adequate. Of the 274,000 men and women serving to-day about 100,000 would leave during the remainder of 1948 under the age and service scheme.

Recruits were still needed for the 20 flying squadrons of the Royal Auxiliary Air Force. These squadrons were at present flying "Spitfires" and "Mosquitos", but it was intended that those which already had suitable airfields would start re-equipment with jet fighters this Summer.

Over 1,000 pilots, including 24 women, had now enrolled in the R.A.F. Volunteer Reserve, and were doing their refresher flying training at the week-ends at reserve flying schools (which would number 20 this Summer). In addition the R.A.F.V.R. included the 14 university air squadrons. These had now 600 out of a planned total of 960 members to be reached in the third year of the squadrons' post-war existence.

In the Royal Observer Corps, recruiting for which reopened on 1st January, 1947, the aim was a strength of about 28,000 observers and 415 officers. At the end of January last 12,150 observers and 326 officers had been enrolled, and a full-time staff of about 50 officers was almost complete.

## FOREIGN

### FRANCE

**NEW JET AIRCRAFT.**—A new French jet aircraft—the SO. 6000N—successfully completed two flight trials at Villacoublay on 23rd March. It has been built by S.N.C.A. du Sud-Ouest and is a two-seater side by side jet trainer fitted with a Rolls Royce NENE engine.

### GREECE

**TRAINING IN AMERICA.**—Fifty Greek Air Force Cadets have arrived in the United States for a year's flying training with the U.S. Air Force. The course will include operational training on Mustang fighters and Mitchell bombers.

### SWEDEN

General Bengt Nordenskjöld, C-in-C. of the Swedish Air Force, has called for a fifty per cent. increase in the number of fighter aircraft during the next five years in order to accelerate conversion to jet aircraft. The Government's plan for the re-organization of the national defence is to be laid before Parliament shortly. A research centre for guided missiles is to be set up to concentrate the research work of all three Services in this field. It is to be headed by Count Oxenstierna, who was formerly Naval Attaché in London.

### TURKEY

Under the American Air Programme Turkey is to receive the following types of aircraft:—

- A.26 Douglas Invader.
- P.47 Thunderbolt.
- P.61 Black Widow.
- C.47 Dakota.
- AT.6 Harvard.
- AT.11 Beechcraft.

Specialists are being sent from the U.S.A. to train Turkish airmen who will later serve as Air Force instructors. Courses have already started at Etimesgut on certain aircraft recently received, and at Eskisehir a course has been opened on aircraft control and the use of radar.

Recently, forty-five Turkish Air Force officers, arrived in the United States for technical training.

## UNITED STATES

**SOURCES OF RECRUITMENT OF PILOTS.**—The United States Air Force will recruit two-thirds of its pilots from the Military and Naval Academies. There will be no separate Air Academy unless it is found that the supply of West Point Cadets and Annapolis Midshipmen for the new Service is insufficient.

It is hoped that this system will assist to promote "unification of spirit" of the three Services and avoid the "somewhat decisive effect" that the establishment of an Air Academy would have. It is also expected to be more economical.

**NEW AIRCRAFT ORDERS.**—A further order for eighty-two B-50s (four-engine very heavy bomber) has been placed with the Boeing Aircraft Company. This brings the total number of B-50s ordered to 215, although so far only two have been delivered.

It is also reported that an order has been placed for ten Douglas C-118 (four-engine transport) aircraft. These are the military version of the DC-6.

The total order so far placed for Northrop's Flying Wing Heavy Bomber is fifteen, this being made up of thirteen B-35s powered by four reciprocating engines driving three-bladed airscrews and two YB-49s powered by eight 4,000 lb. thrust turbo-jets. To date, both YB-49s have been completed and delivered to Muroc Air Force Base for service tests and about half the B-35s have been completed.

The Fairchild Aircraft Corporation have been awarded a contract for the development of a detachable fuselage aircraft to be known as the XC-120 pack-plane. Based on the trailer-truck principle the aircraft will closely resemble the Fairchild C-119 "Packet" and will be capable of flying with or without its fuselage. The preliminary designs call for a pack payload capacity of nine tons for a range of 2,000 miles.

In all, 1,150 aircraft are on order during 1948. These are part of the consignment which, it is planned, will produce an all-jet Force by 1950.

**AMALGAMATION OF AIR TRANSPORT SERVICES.**—The Air Transport Service (A.T.S.) and the Naval Air Transport Service (N.A.T.S.) were amalgamated by order of the new Secretary of Defence as from 4th February, 1948.

The directive establishes amongst other things the following:—

(i) That the new organization shall be called the "Military Air Transport Service" (M.A.T.S.) and will come under the U.S.A.F.

(ii) That the Commander shall be appointed by the Chief of Staff, U.S.A.F., and may be either a Naval or Air Force Officer.

(iii) M.A.T.S. shall establish, maintain and operate all air transport required by the Armed Forces, with certain exceptions.

(iv) The Navy shall retain responsibility for the establishment, maintenance and operation of air transport necessary for the essential internal administration of the Navy, and over routes of sole interest to Naval Forces where the requirement cannot be met by M.A.T.S.

(v) The Navy should be allowed to develop and operate large seaplane transports.

(vi) The Air Force may maintain, independently of M.A.T.S., such miscellaneous air transports as may be organic to its service, but shall not operate any regularly scheduled trunk line service.

(vii) The majority of personnel and equipment now employed by N.A.T.S. (Naval) shall be taken over by M.A.T.S.

The first Commander of M.A.T.S. is to be Lieut.-General Laurence S. Kuter of the U.S.A.F. The Deputy-Commander is a Naval Aviator—Rear-Admiral John Whitney.

**CONSOLIDATION OF COMMANDS.**—The U.S.A.F. has announced that it has decided to consolidate two of its eight major Commands. The Commands concerned are Air Material Command, Dayton, Ohio and Air Proving Ground Command, Valparaiso, Florida. This merging of the two Commands has been anticipated for some time as Air Proving Ground Command is very small and it is difficult to draw the line between its functions and those of Air Material Command.

## REVIEWS OF BOOKS

### NAVAL

**Troopships of World War II.** By Roland W. Charles. (Published and distributed by the Army Transportation Association of Washington, D.C.) \$3.25.

This book is written in a way which is becoming increasingly popular among maritime authors on the other side of the Atlantic; it might be described as a maritime "Who's Who" with the history of each ship arranged in stereotyped biographical form. The result is that the ordinary reader will find it rather heavy going, more particularly as the format is very rigid—one ship to a page with her photograph occupying the upper third and her technical details and war history in outline filling the remainder. There is a mass of information in the book, but it is presented too formally to be attractive to anybody, even a keen student, who picks it up casually.

It is, of course, an open question as to whether anybody will tackle such a book casually. For the student it is a perfect mine of information, as the author—a former graduate of the U.S. Naval Academy and latterly a naval architect—knows his subject inside out and has been closely associated with its operations during the War. He set out to leave on record a complete list of the doings of the ships which carried American troops, and those interested in the subject will find here its skeleton and can clothe it from contemporary newspaper reports or wartime reminiscences.

The author's original plan was to include every ship which carried U.S. troops, but he reluctantly decided to include only those that regularly carried them from ports in the United States, omitting those which carried them for odd voyages overseas or those which were employed for one voyage only. That still left nearly 350 under American control, including some owned by the Dutch, Danes, Italians and others.

A separate section is devoted to British-controlled ships which carried American troops overseas for more than one voyage, but that list is not only very incomplete but also cuts down the information to the barest description of the ship and a photograph—sometimes very out of date as, for instance, the "Highland" ships which are given with their old Nelson colouring before the Royal Mail Lines came into existence. The American photographs, on the other hand, are all up to date, although a certain number of them are confused by a background of docks and equipment. That is easily understandable: it must have been difficult enough to collect them at all, even with the influence of an officer of the controlling department.

About fifty hospital ships are also listed, strictly confined to those run by the U.S. Army and ignoring those of the Navy. The "Liberty" and "Victory" ships which carried troops are lumped together in appendices, but the index, nominal only, is complete and carefully compiled.

### ARMY

**History of the Great War. Military Operations, France and Belgium, 1918.** Vol. V. Edited by Brigadier-General Sir James Edmonds, C.B., C.M.G. (H.M. Stationery Office.) 30s. od.

This volume covers the War on the Western Front from 26th September, 1918, until the Armistice, and describes the final offensive when the Allied armies, from Verdun to the sea, commenced the advance which continued with brief pauses until the end. In his directive of 3rd September Marshal Foch did not contemplate any deep penetration, but a gradual widening of the active front by a succession of attacks followed by steady pressure all along the line.

These operations may appear monotonous. No Napoleonic mass of manoeuvre suddenly appeared to deliver a shattering blow. They were simply a gigantic drive across country by a great line of armies. But three distinct phases emerge. First, the initial hammer blows of siege warfare, the more open fighting which followed, then the final



stage when the Germans, retreating rapidly, were followed by advanced guards of all arms on parallel roads. Such a vast offensive obviously could not be described in detail, but the factors which go to make up the atmosphere of war—so often ignored by amateur critics—are clearly shown, as indeed are the difficulties of dealing with Allies. One is left with a feeling of profound admiration for the British armies—on whom the brunt of the fighting fell—particularly for the tired but dogged Infantry.

The opening stages were so successful that on the evening of 28th September Ludendorf came to the conclusion that Germany must make an offer of peace and ask for an armistice. Hindenburg agreed, and from then onwards the German object was to gain time for negotiations and to prevent Allied entry into Germany before hostilities could be brought to a close. This development is traced right through to its conclusion, and sufficient evidence is given to refute once and for all any claim that the German armies were unbeaten.

The relations between Lord Haig and Marshal Foch are shown to have been very good, and the latter was openly appreciative of the part played by the British armies. But he did not always fall in with Lord Haig's suggestions, for as late as 10th October he refused either to alter the boundaries or to allot American reinforcements to the British sector. Also Lord Haig had to complain of the First French Army on his right consistently hanging back. Marshal Foch did issue repeated "invitations" to General Debeney to push on, but without much result; yet this officer was not relieved of his command. One gathers the impression that Marshal Foch was not supported as he should have been by some of the French commanders, particularly the egregious Pétain.

In paying a well-deserved tribute to the Dominion forces the authors point out certain advantages they enjoyed which were denied to the United Kingdom troops. One of these was that casualties always returned to their own units. In our case drafts were sent up to any formation which required them instead of to their original units, or even other battalions of the same Regiment. The British armies suffered from the same psychological disability in the late war.

As in the previous volume the chapter headed "Reflections" is of considerable interest. In summarizing the final phases, the authors mention that of the old style strategy there was little sign either in planning or in execution, and the operations took the form of frontal pressure or attrition. Marshal Foch did not believe in the possibility of a break-through followed by envelopment of part of the enemy's forces. His attitude towards the problem and his difficulties are explained in the text. Even the operation still in course of preparation on 11th November, 1918, was to be an extension of the offensive front, though it was to be made in a north-easterly direction from Lorraine.

Time and again during the final stages the British Infantry broke the crust, but the mounted troops were invariably held up by machine guns and field artillery in depth, and so opportunities were missed. The tanks were too slow, feeble and unreliable to carry out an effective pursuit or even useful exploitation.

The last chapter, "Retrospect," contains an excellent analysis of the main features of the whole struggle and disposes of some hoary legends. The fact that 1916 was the culminating point for the Germans, and "the Somme was the muddy graveyard of the German field army" is emphasized. The reasons for our offensives in the Summer and Autumn of 1917 are also stated, and their great effect on the German troops is stressed, whilst the dismissal of Marshal Joffre and the interference of the politicians is deplored. The diminishing effort of the French armies in 1917-18 was, perhaps, not fully realized in this Country, nor the fact that the delay in staging the final offensive from Lorraine was due to the policy of leaving the fighting to the British and Americans.

There is much food for thought in this final chapter. We are reminded that war is full of surprises; that success gained in one is not a recipe for victory in another; and, that the "end of one war is no more than a jumping-off line for mental and material preparation for the next." How we failed in this respect, and to what extent the Germans succeeded, is now a matter of history.



In a reference to the age of commanders the following statement appears, "Age is biological and should not be reckoned by the calendar." Many retired officers will be in complete agreement with this.

The volume ends with a consideration of the familiar but pertinent question: "Could we have gone on in November, 1918?" The main factors were, of course, the supply situation and the state of the German Army. The conclusion is that it would have been possible to advance in sufficient strength to deal with the beaten and demoralized enemy.

In this final volume the high standard of its predecessors is maintained. The "Notes" following the chapters and in the text are extremely good. It is a work to be recommended to the serious student of war.

**Military Customs.** By Major T. J. Edwards, M.B.E., F.R.Hist.S. (Gale and Polden, Ltd.) 10s. 6d.

This little book describes various customs and usages observed in corps and regiments of the British Army, and discusses their origins. It deals with such matters as musical customs, officers' Mess customs, regimental Colours, commemorative honours, dress distinctions and so forth. There are a number of interesting illustrations.

The author realizes that there are many customs not mentioned by him, and he states that he will welcome information regarding omissions and corrections where he has been in error.

**The Good Soldier.** By Field-Marshal Earl Wavell. (Macmillan & Co., Ltd.) 8s. 6d.

This is a collection of articles written mostly between 1926 and 1938; a few were compiled during the late war. Nearly all of them have been previously published in the Press. In his Preface the author says: "Whether they are worth collection and republication I must leave readers to judge." The general judgment will surely be in the affirmative.

One expects anything from the pen of Lord Wavell to be most readable, to be lightened with humorous touches, and to be instructive without being heavy. This collection does not disappoint expectation. It is a book we can recommend whole-heartedly.

## ADDITIONS TO THE LIBRARY

### GENERAL

- NUREMBERG: THE FACTS, THE LAW AND THE CONSEQUENCES. By Peter Calvocoressi. Demy 8vo. 176 pages. (Chatto & Windus 1947.) 8s. 6d.
- FRIENDS AMBULANCE UNIT: THE STORY OF THE F.A.U. IN THE SECOND WORLD WAR, 1939-1946. By A. Tegla Davies. Demy 8vo. 494 pages. (Allen & Unwin 1947.) 15s.
- TO THE BITTER END. By Hans Bernd Gisevius. Crown 8vo. 600 pages. (Jonathan Cape 1948.) 18s. Translated from the German.  
The inside story of what went on in Germany among those who plotted against the Nazis.
- THE BECHUANALAND BORDER POLICE. By G. A. Gildea. Demy quarto. 60 pages. Typescript. Presented by Mrs. G. A. Gildea.
- THE JAMESON RAID. By G. A. Gildea. Demy quarto. 84 pages. Typescript. Presented by Mrs. G. A. Gildea.
- THE ISLAND OF CYPRUS: AN ILLUSTRATED GUIDE AND HANDBOOK. Edited by L. and H. A. Mangoian. Demy 8vo. 245 pages. (Mangoian, Cyprus 1947.) 12s. 6d.
- THE VON HASSELL DIARIES, 1938-1944: THE STORY OF THE FORCES AGAINST HITLER INSIDE GERMANY AS RECORDED BY AMBASSADOR ULRICH VON HASSELL, A LEADER OF THE MOVEMENT. Demy 8vo. 365 pages. (Hamish Hamilton 1948.) 15s.  
In 1937 von Hassell's opposition to the Nazi regime cost him his post as Ambassador to Rome. In 1944 it cost him his life. Between these dates he kept a diary in which he told the full story of the men who were determined to save Germany from the Nazis.
- THE SOUTH AND EAST AFRICAN YEAR BOOK AND GUIDE: WITH ATLAS, TOWN PLANS AND DIAGRAMS. Edited by A. Gordon-Brown for the Union Castle Steamship Company. Crown 8vo. 1165 pages. (Sampson Low, Marston 1948.) 7s. 6d.
- THE GOVERNMENT OF ETHIOPIA. By Margery Perham. Demy 8vo. 481 pages. (Faber & Faber 1948.) 30s.
- THE UNPUBLISHED DIARIES OF PIERRE LAVAL. Royal 8vo. 220 pages. (Falcon Press 1948.) 12s. 6d.  
This is Laval's diary written during his imprisonment before trial and smuggled out by his daughter. It deals mainly with the war period but there is a short chapter on pre-war relations between Great Britain and France.
- STATISTICAL ABSTRACT FOR THE BRITISH COMMONWEALTH FOR EACH OF THE TEN YEARS 1936 TO 1945. (Trade and Commerce Section.) Board of Trade. Royal 8vo. 237 pages. (His Majesty's Stationery Office.) 4s.
- THE MASTER-KEY TO PEACE. By Lionel Curtis. Foolscap 8vo. 28 pages. (Oxford University Press 1947.) 1s.  
A short supplement to the Author's book, "War or Peace," published in 1946.
- WHAT PARLIAMENT IS AND DOES: BEING AN INTRODUCTION TO PARLIAMENTARY GOVERNMENT IN THE UNITED KINGDOM. By The Right Honourable Lord Hemingford. Foolscap 8vo. 117 pages. (Cambridge University Press 1947.) 6s.
- CURRENT PROBLEMS No. 20: COLONIES. By Eric A. Walker. Edited by Sir E. Barker. Foolscap 8vo. 168 pages. (Cambridge University Press 1945.) 3s. 6d.  
A study of the relations of Britain, France, Belgium, the Netherlands, the United States of America and the Union of Soviet Republics, with their outlying territories.
- BOLIVAR: THE LIFE OF AN IDEALIST. By Emil Ludwig. Translated by Mary H. Lindsay. Demy 8vo. 317 pages. (Allen 1947.) 17s. 6d.  
The biography of the founder of Venezuela.

- MODERN EUROPEAN HISTORY.** By C. D. Hazen. Crown 8vo. 650 pages. (Holt 1919.) 7s. 6d. Presented by Lieut.-Colonel W. W. Chard.
- NAPOLÉON'S CONQUEST OF PRUSSIA 1806.** By F. L. Petre. Demy 8vo. 319 pages. (John Lane, The Bodley Head 1907.) 12s. 6d. Presented by Lieut.-Colonel W. W. Chard.
- THE HISTORY OF EUROPE FROM 1862 TO 1914. FROM THE ACCESSION OF BISMARCK TO THE OUTBREAK OF THE Great War.** By L. H. Holt and A. W. Chilton. Demy 8vo. 611 pages. (Macmillan 1918.) 14s. Presented by Lieut.-Colonel W. W. Chard.
- THE RISE AND EXPANSION OF THE BRITISH DOMINION IN INDIA.** By Sir Alfred Lyall. Demy 8vo. 397 pages. (Murray 1920.) Presented by Lieut.-Colonel W. W. Chard.
- THIS ALSO HAPPENED.** By George Bassett. Crown 8vo. 125 pages. (Epworth Press 1947.) 6s.  
The war story of a Chaplain to a British General Hospital in India.
- COLONIAL POLICY AND PRACTICE : A COMPARATIVE STUDY OF BURMA AND NETHERLANDS INDIA.** By J. S. Furnivall. Demy 8vo. 568 pages. (Cambridge University Press 1948.) 36s.  
An Appendix contains the Burma trade figures covering the period 1868 to 1937.
- A SHORT HISTORY OF THE FAR EAST.** By K. S. Latourette. Medium 8vo. 665 pages. (Macmillan, New York 1946.) 24s.  
The purpose of this book is to provide an introduction to the contemporary Far East. The history and development of India, China and Japan are included, as well as Tibet, Sinkiang, Mongolia, Korea, Eastern Siberia, Indo-China, Siam, Burma, Ceylon, Malaya, East Indies and the Philippines.
- MAN'S LAST CHANCE.** By The Earl of Darnley. Crown 8vo. 52 pages. (Andrew Dakers 1947.) 3s. 6d.  
The Author takes the view that war is inevitable so long as the individual permits his leaders to attempt to solve international problems by a trial of arms.
- THEY ALSO SERVE : ANIMALS OF THE FIGHTING SERVICES.** By Dorothea St. Hill Bourne. Demy 8vo. 226 pages. (Winchester Publications 1947.) 15s.  
A record of the animal and bird mascots of the Services and Civil Defence Forces during the war. A nominal roll of the holders of the Dickin Medal is included.
- AN HISTORICAL AND POLITICAL GEOGRAPHY OF EUROPE.** By N. J. G. Pounds. Crown 8vo. 540 pages. (Harrap 1947.) 25s.
- THE MEDITERRANEAN.** By André Siegfried. Translated from the French by Doris Hemming. Crown 8vo. 221 pages. (Jonathan Cape 1948.) 10s. 6d.  
A short history of the Mediterranean and the development of its trade and industry.
- DOCUMENTS ON BRITISH FOREIGN POLICY, 1919-1939. Second Series. Volume II.** By E. L. Woodward and R. Butler, Editors. Medium 8vo. 525 pages. (His Majesty's Stationery Office 1947.) 21s.  
Library Note and Appendix IV is a report on German military activities during the year 1931.
- THE TRIANGLE OF FORCES IN CIVIL LEADERSHIP.** (Walker Trust Lectures on Leadership No. IX.) By Field Marshal Earl Wavell. Demy 8vo. 24 pages. (Geoffrey Cumberlege, Oxford University Press 1948.) 2s. 6d.
- SECRETS OF THE BRITISH SECRET SERVICE : BEHIND THE SCENES OF THE WORK OF THE BRITISH COUNTER-ESPIONAGE DURING THE WAR.** By E. H. Cookridge. Demy 8vo. 216 pages. (Sampson Low, Marston 1948.) 15s.
- LEADERSHIP IN DEMOCRACY.** (Walker Trust Lectures on Leadership No. VII.) By Lord Lloyd of Dolobran. Demy 8vo. 21 pages. (Oxford University Press 1939.) 2s.

DESPATCH BY THE SUPREME COMMANDER OF THE ABDA AREA TO THE COMBINED CHIEFS OF STAFF ON THE OPERATIONS IN THE SOUTH-WEST PACIFIC, 15TH JANUARY, 1942, TO 25TH FEBRUARY, 1942. Official. Medium 8vo. 22 pages. (His Majesty's Stationery Office 1948.) 9d.

ABDA—(American, British, Dutch, Australian) Command.

GREAT BRITAIN, THE UNITED STATES AND THE FUTURE. (No. 5 in The Library of World Affairs.) Crown 8vo. 130 pages. (Stevens 1947.) 8s.

BEHIND THE SILKEN CURTAIN: A PERSONAL ACCOUNT OF ANGLO-AMERICAN DIPLOMACY IN PALESTINE AND THE MIDDLE EAST. By Bartlet C. Crum. Crown 8vo. 215 pages. (Gollancz 1947.) 7s. 6d.

The Author was an American member of the Anglo-American Committee of Inquiry on Palestine.

CHINA HANDBOOK, 1937-1945: A COMPREHENSIVE SURVEY OF MAJOR DEVELOPMENTS IN CHINA IN EIGHT YEARS OF WAR. (Revised and enlarged with 1946 Supplement.) By the Chinese Ministry of Information. Demy 8vo. 862 pages. (Macmillan, New York 1947.) 30s.

THE UNITED STATES AND THE CARIBBEAN. (The American Foreign Policy Library.) By Dexter Perkins. Demy 8vo. 253 pages. (Geoffrey Cumberlege, Oxford University Press 1947.) 12s. 6d.

The Author deals with the national problems, the political life and the economy of Cuba, the Dominican Republic, Haiti, Costa Rica, Guatemala, Nicaragua, Honduras, El Salvador and Panama.

THE UNITED STATES AND RUSSIA. (The American Foreign Policy Library.) By Vera Micheles Dean. Demy 8vo. 321 pages. (Geoffrey Cumberlege, Oxford University Press 1947.) 12s. 6d.

ORDEAL BY PLANNING. By John Jewkes. Demy 8vo. 248 pages. (Macmillan 1948.) 12s. 6d.

The Author contrasts a centrally planned economy with a free economy.

NAZI-SOVIET RELATIONS 1939-1941: DOCUMENTS FROM THE ARCHIVES OF THE GERMAN FOREIGN OFFICE. Edited by R. J. Sontag and J. S. Beddie. Demy 8vo. 362 pages. (United States Department of State, Publication No. 3023, 1948.) \$1.

A HISTORY OF PORTUGAL. By H. V. Livermore. Medium 8vo. 502 pages. (Cambridge University Press 1947.) 36s.

THE CAMPAIGN OF PRINCETON 1776-1777. By Alfred Hoyt Bill. Demy 8vo. 145 pages. (Princeton University Press 1948.) \$2.50.

THE SECOND WORLD WAR: A SHORT HISTORY. By Cyril Falls. Demy 8vo. 304 pages. (Methuen 1948.) 15s.

BRITAIN'S COLONIES IN WORLD TRADE. By F. V. Meyer. Demy 8vo. 281 pages. (Geoffrey Cumberlege, Oxford University Press.) 18s.

Dr. Meyer deals with the history and economic effects of Imperial Preference as applied to the trade of the British Colonies.

FROM CHARLEMAGNE TO HITLER: A SHORT POLITICAL HISTORY OF GERMANY. By J. S. Davies. Demy 8vo. 261 pages. (Cassell 1948.) 12s. 6d.

Includes chronological Table of Events from 800 to 1945.

THE GOEBBELS DIARIES. Translated and Edited by Louis P. Lochner. Demy 8vo. 458 pages. (Hamish Hamilton 1948.) 21s.

THE ATOMIC PROBLEM: A NEW APPROACH. By J. M. Spaight. Crown 8vo. 56 pages. (Arthur Barton 1948.) 3s. 6d.

ATOMIC CHALLENGE: A SYMPOSIUM. By Professor J. D. Cockcroft and others. Crown 8vo. 180 pages. (Winchester Publications 1947.) 8s. 6d.

The British Broadcasting Corporation "Atomic Week" broadcasts in permanent



form. Among the contributions are: "The New Warfare," by Captain Cyril Falls; "The First Bomb," by Group Captain Cheshire; and "Hiroshima and Nagasaki," by Dr. Bronowski.

**DEFEAT IN VICTORY.** By Jan Ciechanowski. Crown 8vo. 415 pages. (Gollancz 1948.) 18s.

The Author was Polish Ambassador to the United States from 1941 to 1945. This is a step-by-step account of what he regards as the betrayal of his country.

**NEW ZEALAND AFTER FIVE WARS.** By A. J. Harrop. Demy 8vo. 227 pages. (Jarrolds 1948.) 18s.

A study of New Zealand from the era of settlement to that of expansion, then from the First World War to the end of the Second.

**A MANUAL OF INTERNATIONAL LAW.** (The Library of World Affairs.) By Geog Schwarzenberger. Demy 8vo. 428 pages. (Stevens 1947.) 25s.

**SEIZURE OF TERRITORY: THE STIMSON DOCTRINE AND RELATED PRINCIPLES IN LEGAL THEORY AND DIPLOMATIC PRACTICE.** By Robert Langer. Demy 8vo. 313 pages. (Princeton University Press 1947.) \$3.50.

**BERLIN UNDERGROUND.** By Ruth Andreas-Friedrich. Translated by Barrows Mussey. Demy 8vo. 254 pages. (Latimer House 1948.) 12s. 6d.

A record of anti-Nazi activities before and during the War.

**OPERATION MOSCOW.** By Christopher Norborg. Demy 8vo. 285 pages. (Latimer House 1948.) 15s.

A detailed factual account of Soviet policy and practice written by the late Chief of the Northern Europe Regional Section of U.N.R.R.A.

**CITIZEN OF THE WORLD: FRANKLIN D. ROOSEVELT.** By Alden P. Hatch. Demy 8vo. 320 pages. (Skeffington 1948.) 21s.

**JOURNAL OF THE WAR YEARS (1939-1945) AND ONE YEAR LATER.** Volumes I and II. By Anthony Weymouth. Demy 8vo. 372/415 pages. (Littlebury & Co. 1948.) 30s.

**NEW CYCLE IN ASIA: SELECTED DOCUMENTS ON MAJOR INTERNATIONAL DEVELOPMENTS IN THE FAR EAST, 1943-1947.** By Harold N. Isaacs. Demy 8vo. 212 pages. (Macmillan, New York 1947.) 16s.

**ALSOS. THE SEARCH FOR THE GERMAN ATOM BOMB: WITH AN EXAMINATION OF THE FAILURE OF GERMAN SCIENCE.** By Samuel A. Goudsmit. Crown 8vo. 259 pages. (Sigma Books, U.S.A., 1947.) 15s.

## NAVAL

**THE "SWORDFISH" SAGA: STORY OF THE FAIREY "SWORDFISH" TORPEDO BOMBER AND A HISTORY OF TORPEDOPLANE DEVELOPMENT IN THE ROYAL NAVY.** By B. J. Hurren. Imperial 8vo. 48 pages. (Clowes—The Fairey Aviation Co. 1948.) 3s. 6d. Presented by the Author.

**CHRONOLOGICAL DIAGRAM OF PRINCIPAL EVENTS 1939-1945.** By the Admiralty. 7 pages. Presented by the Admiralty.

**DARK SEAS ABOVE.** By J. F. Gibson. Crown 8vo. 286 pages. (Blackwood 1947.) 9s. A personal account of submarine warfare from 1942 to 1945, in Home Waters and the Mediterranean, in the Indian Ocean, the East Indies and Pacific, and in Hong Kong Waters.

**HISTOIRE DE L'ATLANTIQUE.** By Jacques Godechot. Demy 8vo. 364 pages. (Bordas, Paris 1947.) Presented by the Publishers.

**A DAY TO DAY CALENDAR OF NAVAL ACTIONS AND ACHIEVEMENTS AND A LIST OF ACTIONS 1793-1840, FOR WHICH THE GENERAL SERVICE MEDAL (NAVY) WAS GRANTED.** Compiled by Commander W. B. Rowbotham. Foolscap folio. (Typescript.) Presented by Commander W. B. Rowbotham, R.N.

THE GENERAL SERVICE MEDAL (NAVY), 1793-1840. Compiled by Commander W. B. Rowbotham. Foolscape folio. (Typescript.) Presented by Commander W. B. Rowbotham, R.N.

THE BACKGROUND OF EASTERN SEA POWER. By F. B. Eldridge. Demy 8vo. 386 pages. (Phoenix House, London 1948.) 18s.

The Author takes for his theme the part played by the exercise of sea power in the Pacific and Indian Oceans from the earliest recorded times until the establishment of British naval supremacy in the XVIIIth Century.

TROOPSHIPS OF WORLD WAR II. By Roland W. Charles. Demy 8vo. 374 pages. (Army Transportation Association, Washington, D.C. 1947.) \$3.25. Presented by the Author. See Review in this JOURNAL.

ADMIRAL SIR HERBERT RICHMOND, 1871-1946. By G. M. Trevelyan. Medium 8vo. 15 pages. (Geoffrey Cumberlege 1948.) 3s. 6d.

From the proceedings of the British Academy, Volume XXXII.

A FORMIDABLE COMMISSION. Written by The Wardroom Officers of His Majesty's Aircraft-Carrier "Formidable." Demy 8vo. 159 pages. (Seeley Service & Co. 1947.) 12s. 6d.

The story covers the Second Commission of the "Formidable" from May, 1944, to the end of the War, and includes the raids on the "Tirpitz" in Kaafjord and the operations with the British Pacific Fleet.

U.S. NAVAL LOGISTICS IN THE SECOND WORLD WAR. By Duncan S. Ballantine. Demy 8vo. 308 pages. (Princeton University Press 1947.) \$3.75.

In addition to a study of the logistics of the War, chapters on logistics in naval war, and in total war are included.

#### MILITARY

WAVELL (1883-1941): A MILITARY BIOGRAPHY. By Major-General Collins. Demy 8vo. 488 pages. (Hodder & Stoughton 1947.) 30s.

This book covers in detail Field Marshal Lord Wavell's nine campaigns fought in the 12 months from June, 1940, to June, 1941. These were, the Western Desert, British Somaliland, Italian East Africa, Eritrea, Cyrenaica again, Greece, Crete, Iraq and Syria.

THE ESSENTIALS OF MILITARY KNOWLEDGE. By Major D. K. Palit. Crown 8vo. 140 pages. (Gale & Polden 1948.) 10s. 6d. Presented by the Publishers.

LIST OF THE OFFICERS OF THE BENGAL ARMY, 1758-1834. Part IV, "S"—"Z." By V. C. P. Hodson. Demy 8vo. 713 pages. (Phillimore 1947.) 42s.

THE GOOD SOLDIER. By Field Marshal Earl Wavell. Crown 8vo. 215 pages. (Macmillan 1948.) 8s. 6d. Presented by the Publishers. See Review in this JOURNAL.

BRIEF HISTORY OF THE K.G.V.'S OWN BENGAL SAPPERS AND MINERS GROUP, ROYAL INDIAN ENGINEERS (August, 1939-July, 1946). Compiled by G. Pearson. Demy 8vo. 153 pages. (Roorkee 1947.) 10s. Presented by The Regiment.

EL ALAMEIN TO THE RIVER SANGRO: THE PERSONAL ACCOUNT OF THE EIGHTH ARMY'S CAMPAIGN. By Field Marshal The Viscount Montgomery of Alamein. Demy 8vo. 132 pages. (Hutchinson 1948.) 25s.

HISTORY OF THE GREAT WAR: MILITARY OPERATIONS, FRANCE AND BELGIUM, 1918. Volume V, 26th September—11th November. The Advance to Victory. Official. Demy 8vo. 675 pages. (His Majesty's Stationery Office 1947.) 30s.

RULES OF PROCEDURE FOR COURTS-MARTIAL, AND OTHER MATTERS, 1947. Official. Demy 8vo. 99 pages. (His Majesty's Stationery Office 1948.) 2s.

LINDSELL'S MILITARY ORGANIZATION AND ADMINISTRATION: 27TH EDITION. By Brigadier J. F. Benoy. Crown 8vo. 301 pages. (Gale & Polden 1948.) 12s. 6d.

**RECORDS OF THE STIRLINGSHIRE MILITIA: RECORDS OF THE STIRLINGSHIRE, DUMBARTON, CLACKMANNAN, AND KINROSS MILITIA, HIGHLAND BORDERERS LIGHT INFANTRY, NOW 3RD BATTALION ARGYLL AND SUTHERLAND HIGHLANDERS (PRINCESS LOUISE'S).** By A. H. Middleton. Crown 8vo. 255 pages. (Eneas Mackay, Stirling 1904.) 17s. 6d.

**WITH THE CONNAUGHT RANGERS IN QUARTERS, CAMP, AND ON LEAVE.** By General E. H. Maxwell. Demy 8vo. 325 pages. (Hurst and Blackett 1883.) 12s. 6d.

**MILITARY CUSTOMS.** By T. J. Edwards. Crown 8vo. 120 pages. (Gale & Polden 1948.)

**YOUTH OF YESTERYEAR: CAMPAIGNS, BATTLES, SERVICE AND EXPLOITS OF THE GLASGOW TERRITORIALS IN THE LAST GREAT WAR.** By Ion S. Munro. Crown 8vo. 117 pages. (William Hodge 1939.)

**A HISTORY OF THE HORNCastle DETACHMENT, 4TH BATTALION THE LINCOLNSHIRE REGIMENT (TERRITORIAL ARMY).** From the raising of the original Volunteer Corps in 1803 to the present time. With Supplement for the years 1936 to 1947. Demy 8vo. 86 pages. (W. K. Morton 1st 1936.) Presented by The Officer Commanding 4th Battalion The Royal Lincolnshire Regiment (Territorial Army).

**HERALDRY IN WAR: FORMATION BADGES, 1939-1945.** (Revised and enlarged edition.) By Howard N. Cole. Demy 8vo. 229 pages. (Gale & Polden, 2nd Edition, 1947.) 12s. 6d.

**THE BEGINNING OF THE UNITED STATES ARMY, 1783-1812.** By James Ripley Jacobs. Demy 8vo. 419 pages. (Princeton University Press 1947.) \$5.

**HISTORY OF THE ARGYLL AND SUTHERLAND HIGHLANDERS, 1ST BATTALION (PRINCESS LOUISE'S), 1939-1945.** By Lieut.-Colonel F. C. C. Graham. Medium 8vo. 247 pages. (Nelson 1948.) Presented by The Regiment.

# AIR

**"F" SQUADRON.** By Carlo Bonciani. Translated from the Italian. Crown 8vo. 211 pages. (Dent 1947.) 8s. 6d.

After service with the Italian Army, the author joined the force formed to fight on the Allied side. He was a parachutist in a unit under command of 13 Corps, and served at Arno, Florence, and in the Apennines.

**AIR POWER CAN DISARM: A SEQUEL TO "AIR POWER AND THE CITIES," 1930.** By J. M. Spaight. Demy 8vo. 173 pages. (Air League of the British Empire.) (Pitman 1948.) 10s. 6d.

This book on the strategic air offensives of the late war challenges the assumption that the atomic bomb and the guided missile have made this kind of air warfare obsolete. In the view of the Author, the atomic bomb will never be used again and the guided missile will continue to be a failure.

# "WHAT TO READ"

The articles on "What to Read," which have appeared in the JOURNAL, have been brought up to date and republished in pamphlet form. Copies can be supplied, price 1s. 6d., post free.

## ONE HUNDRED AND SEVENTEENTH ANNIVERSARY MEETING

ON TUESDAY, 2nd MARCH, 1948, AT 3 p.m.

FIELD-MARSHAL THE LORD WILSON OF LIBYA, G.C.B., G.B.E., D.S.O.

(Chairman of the Council), presiding

### NOTICE OF THE MEETING

THE CHAIRMAN: I will call the Meeting to order for the 117th Anniversary Meeting of the Royal United Service Institution, and the Secretary will read the Notice convening the Meeting.

THE SECRETARY, CAPTAIN E. ALTHAM, R.N., read the notice convening the Meeting, which had been published in *The Times* of 17th February, 1948.

### ANNUAL REPORT FOR 1947

The Council have the honour to present their Annual Report for 1947.

#### COUNCIL

##### VICE-PATRON

Her Royal Highness the Princess Elizabeth, K.G., C.I., has been graciously pleased to accept the invitation of the Council to become the Vice-Patron of the Institution.

##### VICE-PRESIDENTS

General Sir Walter M. St.G. Kirke, G.C.B., C.M.G., D.S.O., was elected a Vice-President in succession to Field-Marshal Lord Chetwode, G.C.B., O.M., G.C.S.I., whose term of office had expired and who did not wish to stand for re-election.

##### ELECTED MEMBERS

Captain W. G. Andrewes, C.B.E., D.S.O., R.N., was elected a Naval Member of the Council in the vacancy caused by the resignation of Rear-Admiral G. E. Creasy, C.B., C.B.E., D.S.O., M.V.O.

Field-Marshal the Lord Wilson of Libya, G.C.B., G.B.E., D.S.O., was elected a Regular Army Member of the Council in the vacancy caused by the resignation of General Sir Ronald Adam, G.C.B., D.S.O., O.B.E.

Lieut.-General Sir John Harding, K.C.B., C.B.E., D.S.O., M.C., was elected a Member of the Council in the vacancy caused by the resignation of General Sir John Crocker, K.B.E., C.B., D.S.O., M.C.

Major-General R. G. Feilden, C.B., C.B.E., was elected a Member of the Council in the vacancy caused by the resignation of General Sir Frederick Pile, G.C.B., D.S.O., M.C.

General Sir William Slim, G.B.E., K.C.B., D.S.O., M.C., was elected a Member of the Council in the vacancy caused by the election of General Sir Walter Kirke to be a Vice-President.

Major-General Ivor T. P. Hughes, C.B., D.S.O., M.C., was elected a Member of the Council in the existing vacancy for a Territorial Army Representative.

Admiral Sir Charles J. C. Little, G.C.B., G.B.E., having completed three years' service, retires but offers himself for re-election for which he is eligible.



## REPRESENTATIVE MEMBERS

Captain R. M. Dick, C.B.E., D.S.C., R.N., succeeded Captain C. L. Robertson, R.N., as Admiralty Representative on the Council.

## EX-OFFICIO MEMBERS

Captain R. M. J. Hutton, C.B.E., D.S.O., R.N., accepted the invitation of the Council to become an ex-officio Member on taking up the appointment of Director of the Royal Naval Staff College.

Air Vice-Marshal T. M. Williams, C.B., O.B.E., M.C., D.F.C., accepted the invitation of the Council to become an ex-officio Member on taking up the appointment of Commandant of the R.A.F. Staff College.

## HONORARY MEMBERS

Major-General A. J. Boase, C.B.E., has accepted the invitation of the Council to become the Honorary Member (Australia) vice Lieut.-General E. K. Smart, D.S.O., M.C.

## STAFF

## ASSISTANT EXECUTIVE OFFICER AND CURATOR

Captain J. H. Laing, late the Nigeria Regiment, has been appointed in succession to Captain S. J. Parker, M.C., D.C.M., who had been Assistant Executive Officer since 1928 and Curator since 1940.

## NEW MEMBERS

The total number of members on the roll at the end of 1947 was 5,821, as compared with 5,658 in 1946. During the past year 683 Members joined the Institution as compared with 596 in 1946. There were 390 withdrawals as compared with 135 in 1946; 31 Life and 63 Annual Members died; 36 Members were struck off for being two years in arrear with their subscription.

The details of Members joining are as follows:—

Regular Army	352
Royal Air Force	139
Royal Navy	81
Indian Army	49
Royal Marines	25
Dominion Forces	13
Territorial Army	9
Royal Naval Volunteer Reserve	4
Royal Air Force Volunteer Reserve	3
Women's Royal Naval Service	2
Royal Indian Navy	2
Auxiliary Territorial Service	2
Royal Naval Volunteer Supplementary Reserve	1
Royal Indian Air Force	1
	<hr/>
	683

This gives a net increase of 163 as compared with 335 in 1946 and 103 in 1945. As the loss of some of the Life Members does not affect the financial aspect, the financial gain on the year is 193.

The number of Life Members who joined during 1947 was 276 as compared with 163 in 1946 and represents a further outstanding record.

The system of Liaison Officers continues to provide a most valuable link

with the Services and means of making the advantages of membership better known and of encouraging officers to join.

#### INCREASES OF SUBSCRIPTIONS

It will be recalled that a Resolution was passed at the Anniversary Meeting held in March, 1947, empowering the Council to raise the subscriptions to certain specified new rates as from 1st January, 1948, should they consider this necessary.

In view of the unavoidable rising expenditure, especially in connection with the cost of printing the JOURNAL, increase of wages, and general inflation, the Council deemed it essential to give effect to this policy, and Members were notified by letter and in the JOURNAL of the pending increases.

#### COVENANTED SUBSCRIPTIONS

The advantages of securing the old and lower rate of membership by covenanting subscriptions before the 31st December, 1947, have been apparent to many Members and there are now 1,225 Annual and 511 Life Members who have signed the Deed as compared with 580 Annual and 131 Life at the end of 1946.

#### FINANCE

The surplus of income over expenditure, as shown in the Revenue Account, was £30 16s. 7d. for 1947, as compared with £387 4s. 10d. in 1946. Credit has not, however, been taken for any Income Tax recoverable on Covenanted Subscriptions where members have not yet sent in their certificates. If all those outstanding are received, they should bring in a further £60 10s. 10d. in respect of the claims for 1946-47. Recovery of Income Tax on Covenanted Subscriptions in respect of that year is limited to what is due up to the 5th April, 1947, and nothing is credited after that date.

Comparisons of the principal items of Receipts and Expenditure are shown below

#### RECEIPTS

The receipts reflect, on the one hand, the loss of Annual Subscriptions due to the large number of resignations and the transfer of many annual members to Covenanted Life Membership, and on the other the great increase of the amount brought to credit in respect of Life Subscriptions. Both are, in the main, the direct result of the pending increase of all rates of subscription.

	1947			1946		
	£	s.	d.	£	s.	d.
Annual Subscriptions ... ..	5,133	17	0	5,326	7	6
Life Subscriptions (amount brought to credit) ... ..	1,227	3	0	506	0	0
Museum Takings ... ..	3,113	7	6	2,966	9	6
Journal Sales ... ..	1,043	4	3	1,409	11	4
Journal Advertisements ... ..	523	16	8	556	15	6
Sales of Pamphlets ... ..	166	19	5	134	15	1

**ANNUAL SUBSCRIPTIONS.**—The figure shown for 1947 represents the net amount credited to the year under this heading after £376 13s. 0d. had been returned to Annual Members because they had transferred to Covenanted Life Membership during the year and signed new Bankers Orders for £3 as their first payment under that scheme.

**LIFE SUBSCRIPTIONS.**—The gross receipts for Life Subscriptions in 1947 were £3,878 15s. 0d. as compared with £1,988 0s. 0d. in 1946. After deducting £1,227 3s. 0d., representing £1 5s. 0d. for each Life

Member to be credited to the General Account, a sum of £2,651 12s. 0d. is due to the Life Subscription Fund. Of this £2,000 has already been invested in Metropolitan Water Board 3% "B" Stock.

**COVENANTED SUBSCRIPTIONS.**—As will be seen, £1,147 0s. 8d. has been credited in the Revenue Account for the recovery of Income Tax due on these subscriptions.

**MUSEUM.**—Admission to the Museum was increased in February from 1s. to 1s. 6d.; children 9d. No complaints have been made by the public and there has been no sign that the increase has deterred any appreciable number of people from visiting it.

Although there is an increase in the total takings as compared with 1946, it must be noted that the Museum was closed for nearly seven weeks in that year.

**JOURNAL SALES.**—The falling off in Journal Sales was to be expected in view of the drastic reductions of the Services and consequent loss of orders for Messes.

A large number of complimentary copies of the Journal have been sent to Messes which do not at present subscribe, and it is hoped this may result in new orders.

**JOURNAL ADVERTISEMENTS.**—There has been a slight reduction in the sum received for advertisements in the Journal.

**PAMPHLET SALES.**—These show a satisfactory increase.

#### EXPENDITURE

The following are the principal categories of expenditure and a comparison with 1946:

	1947			1946		
	£	s.	d.	£	s.	d.
Salaries ... ..	3,149	15	7	2,934	0	3
Wages and National Insurance ... ..	3,647	3	8	3,770	13	9
Journal Printing ... ..	3,078	4	7	2,848	6	4
Other Printing and Stationery ... ..	366	5	10	203	10	0
Library, Purchase and Binding of Books, Newspapers, etc. ... ..	413	10	1	218	15	10
General Repairs and Maintenance ... ..	471	13	7	31	19	1
Lighting ... ..	301	14	3	388	2	6
Fuel ... ..	208	2	9	196	1	9
House Expenses and Sundries ... ..	184	5	4	139	5	2
Museum Expenses ... ..	149	0	7	188	14	4

**SALARIES AND WAGES.**—With the completion of staff and stabilising of the scales of salaries and wages, this expenditure should now become fairly normal. The figure for 1947 does not, however, represent their full cost because five employees joined at various dates during the year.

**JOURNAL PRINTING.**—The cost of printing has been increased by a further 18 per cent. during the year, making a total rise of 63 per cent. on pre-war charges. Although the number of Journals required for sales has diminished, that for new members has increased.

**OTHER PRINTING.**—The increased expenditure on other printing has been largely due to circularising all members with the notices of the increase of subscriptions, new Bankers Orders and Covenanting Forms.

**LIBRARY.**—It was approved that the original allotment for the Library should be increased by £150 to £400 in order to obtain additional books needed to bring it up to date.

**GENERAL REPAIRS AND MAINTENANCE.**—This heavy charge on the year's income is due to the accumulation during the War of necessary repairs (other

than War Damage) and maintenance work required in the Institution building, but for which it has hitherto been impossible to obtain a licence.

It will be recalled that special mention was made in the Annual Report for 1945 that such work was pending and £2,000 was invested out of accumulated funds in that year as a reserve to meet such expenditure. It is satisfactory therefore, that so far it has been met without drawing on this reserve.

#### GENERAL REMARKS

It is satisfactory that, despite the demobilization of so very many officers since the end of the War, there are obvious signs that the value of the facilities afforded by the Institution is recognized more and more. This is indicated, not only by the number of new members, but also by the increased use being made of the Library, the popularity of the JOURNAL, and the better attendances at lectures.

This augurs well for the future, but it is too early to say whether the increase of subscriptions in 1948 will not merely meet expenditure which is inevitable, but also provide for all that is desirable.

With so many unknown factors, the financial position will require careful watching.

#### JOURNAL

The JOURNAL has had the benefit of the many valuable lectures given at the Institution during the year and the reports or the discussions which followed. Of equally high standard have been contributions by many officers with special knowledge of their subjects.

The series of articles on "What to Read" seem to have met a long-standing demand for such guidance in professional study. They have been republished in pamphlet form and the intention is to bring out new and up-to-date editions from time to time.

Acknowledgment is due to the Service Departments and their Representatives on the Council for invaluable help in preparing the lecture programme, facilitating approval for articles written by serving officers, and assisting the Editor in many ways.

Every endeavour is made to make the contents of the JOURNAL representative of what the Institution stands for—the study of scientific developments as they affect the Services and may influence future warfare; of the literature and lessons of the late and earlier wars; of the trend of the politico-military relations of the Powers; and of the interdependence and co-ordination of the Services, to mention only a few of the more important subjects. The JOURNAL is also one of the chief mediums for giving each Service a better understanding of the other two; for this reason, apart from all others, it is hoped that it will find a place in every officers' mess.

#### MUSEUM

Work on replacing the Rubens ceiling having been cancelled by the Ministry of Works and the three panels which had been replaced having been taken down again for the whole ceiling to be cleaned, the scaffolding and temporary screen were removed and the Banqueting Hall completely re-opened to the public on 1st October.

Except for the ceiling, which will not be ready for some time, the Museum is now fully reconstituted. The work of rearranging the contents of show cases and thinning out exhibits and pictures, which had become unduly crowded before the War, has been completed with marked benefit to the lay-out of the Museum as a whole.

In view of the heavy increase in cost of maintenance, the Council felt justified in raising the price of admittance for the public from 1s. to 1s. 6d. in February, 1947. Children under 14 are admitted half price. No complaints



have been received about the increased charge, nor has there been any indication that it has been the cause of fewer visitors. During 1947, 47,095 paid for admission as compared with 79,026 in 1946, but the takings show an increase of £146 19s. 0d. This is partly due to the fact that the Museum was closed from 25th February to 5th April in 1946.

Free admission was given to 12,449 H.M. and Allied Forces and to 2,211 Scouts, Guides and school parties, and members' guests.

His Majesty the King honoured the Museum by presenting a Royal Standard flown by H.M.S. "Vanguard" on the occasion of the Royal visit to South Africa early in the year.

Valuable additions have also been received from the Service Departments and private donors, to whom the thanks of the Council have been conveyed. These have all been detailed in the Secretary's Notes in the JOURNAL.

The Institution is indebted to Major-General Sir John Whitaker for sending on long loan the unique collection of medals and orders made by his father, the late Colonel Sir A. E. Whitaker. These have been mounted in the Wolseley Room, the work of sorting and arranging having been done with the expert advice and assistance of Captain W. A. Tinlin, M.C.

This room, which was slightly damaged by blast, has been restored and rearranged so that the contents is now more representative. In addition to the Whitaker Collection of Medals and Field-Marshal Lord Wolseley's orders and decorations, it contains those which belonged to Field-Marshal Lord Allenby, Lieut.-General Sir John Moore and his brother, Admiral Sir Graham Moore.

The orders and decorations of General Sir Howard Douglas, G.C.B., G.C.M.G., have kindly been lent by his great-granddaughter, Mrs. L. B. Bridge. These are of particular interest because he was the first Chairman of the Institution (then known as the Naval and Military Library and Museum) on its foundation in 1831. They have been placed under his portrait in the inner hall of the Members' entrance.

Through the generosity of former officers of three disbanded Irish regiments—the Royal Munster Fusiliers, Connaught Rangers, and Royal Irish Regiment, much of their silver, which was on deposit, has been lent to newly formed Army messes. Lack of space prevented most of it being shown in the Museum, whereas it will now adorn mess tables and thereby keep the names of the old regiments alive in the Army.

The Institution has also assisted these messes by lending surplus pictures.

As stocktaking and sorting of spare exhibits proceeds, it is hoped to give further effect to the policy of assisting other Service and regimental museums with loans.

A new feature in the JOURNAL is a short article each quarter, written by the Secretary, giving Members the latest information about the Museum and new acquisitions.

#### LIBRARY

During the year, 4,165 books were issued on loan, showing an increase of 120 per cent. on the figure for the previous year. Accessions amounted to 394 volumes—an increase of 51 per cent. on the 1946 figure.

The price of books again rose during the year to 48 per cent. above pre-war prices; several publishers have notified a further increase.

In the case of some new publications, there was frequently a waiting list. This is regrettable, but unavoidable owing to the present very limited size of editions. Orders for new books are invariably placed with the booksellers before the date of publication, and the shortage is due to the present controls.

Members using the Library have co-operated by paying close attention to the Library regulations, and the number of lost books remains low.

# ROYAL UNITED SERVICE INSTITUTION BALANCE SHEET, 31st DECEMBER, 1947

1946		1945		1944		1943		1942		1941		1940		1939		1938		1937		1936		1935		1934		1933		1932		1931		1930		1929		1928		1927		1926		1925		1924		1923		1922		1921		1920		1919		1918		1917		1916		1915		1914		1913		1912		1911		1910		1909		1908		1907		1906		1905		1904		1903		1902		1901		1900		1899		1898		1897		1896		1895		1894		1893		1892		1891		1890		1889		1888		1887		1886		1885		1884		1883		1882		1881		1880		1879		1878		1877		1876		1875		1874		1873		1872		1871		1870		1869		1868		1867		1866		1865		1864		1863		1862		1861		1860		1859		1858		1857		1856		1855		1854		1853		1852		1851		1850		1849		1848		1847		1846		1845		1844		1843		1842		1841		1840		1839		1838		1837		1836		1835		1834		1833		1832		1831		1830		1829		1828		1827		1826		1825		1824		1823		1822		1821		1820		1819		1818		1817		1816		1815		1814		1813		1812		1811		1810		1809		1808		1807		1806		1805		1804		1803		1802		1801		1800		1799		1798		1797		1796		1795		1794		1793		1792		1791		1790		1789		1788		1787		1786		1785		1784		1783		1782		1781		1780		1779		1778		1777		1776		1775		1774		1773		1772		1771		1770		1769		1768		1767		1766		1765		1764		1763		1762		1761		1760		1759		1758		1757		1756		1755		1754		1753		1752		1751		1750		1749		1748		1747		1746		1745		1744		1743		1742		1741		1740		1739		1738		1737		1736		1735		1734		1733		1732		1731		1730		1729		1728		1727		1726		1725		1724		1723		1722		1721		1720		1719		1718		1717		1716		1715		1714		1713		1712		1711		1710		1709		1708		1707		1706		1705		1704		1703		1702		1701		1700		1699		1698		1697		1696		1695		1694		1693		1692		1691		1690		1689		1688		1687		1686		1685		1684		1683		1682		1681		1680		1679		1678		1677		1676		1675		1674		1673		1672		1671		1670		1669		1668		1667		1666		1665		1664		1663		1662		1661		1660		1659		1658		1657		1656		1655		1654		1653		1652		1651		1650		1649		1648		1647		1646		1645		1644		1643		1642		1641		1640		1639		1638		1637		1636		1635		1634		1633		1632		1631		1630		1629		1628		1627		1626		1625		1624		1623		1622		1621		1620		1619		1618		1617		1616		1615		1614		1613		1612		1611		1610		1609		1608		1607		1606		1605		1604		1603		1602		1601		1600		1599		1598		1597		1596		1595		1594		1593		1592		1591		1590		1589		1588		1587		1586		1585		1584		1583		1582		1581		1580		1579		1578		1577		1576		1575		1574		1573		1572		1571		1570		1569		1568		1567		1566		1565		1564		1563		1562		1561		1560		1559		1558		1557		1556		1555		1554		1553		1552		1551		1550		1549		1548		1547		1546		1545		1544		1543		1542		1541		1540		1539		1538		1537		1536		1535		1534		1533		1532		1531		1530		1529		1528		1527		1526		1525		1524		1523		1522		1521		1520		1519		1518		1517		1516		1515		1514		1513		1512		1511		1510		1509		1508		1507		1506		1505		1504		1503		1502		1501		1500		1499		1498		1497		1496		1495	
ACCUMULATED FUND—	Excess of Assets, over	Liabilities as at	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...</																																																																																																																																																																																																																																																																																																																																																																																																																											





## THE CHAIRMAN'S ADDRESS

Copies of the Annual Report are in your hands.

The first paragraph places on record an event of historic importance to the Institution. By Her gracious acceptance of the Council's invitation to become a Vice-Patron, Her Royal Highness The Princess Elizabeth has continued a long-standing privilege. Just as we were honoured with the patronage of the Sovereign since the Institution was founded in 1831 and King William IV became our first Patron, so the heir to the Throne has been our Vice-Patron since the Prince of Wales (afterwards His Majesty King Edward VII) accepted that office in 1859.

It is particularly appropriate that the Princess, who served in the A.T.S. in the late War, should be our first Vice-Patron since membership of the Institution was extended to include ladies who are serving or who have served as officers in any of the three Services.

Turning now to business of a more domestic kind : the first page of the Report calls for no comment.

On page 2 you will see that 683 new Members joined during 1947. This is a record, except for what may be called the Foundation Members who joined during the first three years of the Institution's existence. Against this, there were 390 withdrawals. Both these figures reflect, to a considerable extent, the increase in subscriptions, which Members were notified would take place as from 1st January, 1948. You will recall that at last year's meeting the Council were empowered to introduce this increase on that date if they thought it expedient to do so. It soon became obvious that this step must be taken, and Members were informed in good time before the end of the year. At the same time, it was pointed out to them that by covenanting to pay their subscriptions for seven years, they would not be called upon for the higher rate until the end of that period. Many new Members grasped the opportunity, and many old Members also signed Deeds of Covenant. Many took advantage of a similar arrangement to become or transfer to Life Members at a lower rate ; others, unfortunately, felt compelled to resign.

This influx of new Members was particularly gratifying at a time when the Services are being cut down so drastically, and it is a sign that the value of the R.U.S.I. to the serving officer is being increasingly recognised.

You will note that the Report pays tribute to the Liaison Officers for their assistance in making the Institution better known, and in facilitating enrolment of Members without any unnecessary correspondence or formality.

I will now call on the Chairman of the Finance Committee, Brigadier J. A. Longmore, to remark on the Finance section of the Report.

## FINANCE

BRIGADIER J. A. LONGMORE (Chairman of the Finance Committee) : You have the Accounts in front of you, and you will find that the result of this year is that we have got a balance of Income over Expenditure of £30, as against £387 last year. This is in spite of the increase of membership. It shows how much inflation is affecting the Institution, and how close to the wind we have to sail financially.

The Chairman has referred to the increased subscriptions : we cannot yet know how these are going to affect us until we have had a full year's working, but in that connection, may I say what a lot of work it is taking the Staff to bring in the change.



They have been working very long hours to do it, and may I specially record our thanks to the Chief Clerk, Miss Bickell, for all she has been doing.

This difference of £350 that I spoke about is really not as bad as it sounds, because we have this year spent some £620 on repairs, and also on extra books for the Library. We might have resorted to capital for those expenditures—from savings that we made during the War; but I think you will agree with me that an Institution such as this should not show too large an income on its Balance Sheet, if it can help it, but should conserve its capital.

The question of the future financial side of this Institution is for the Finance Committee and the Council, and they will look after it and see that its great reputation does not suffer, and may I particularly refer to the JOURNAL and the Library, which must be kept up to standard at all costs. That, as I say, is their affair.

Now may I turn to the Members: what can they do to help the financial stringency? May I suggest they should see that every other Member realizes the importance of these Annual Covenants. They do not cost the Member any more. For instance, an Annual Member pays £1 10s. od., but when I tell you that means £2 14s. od. to this Institution, you will see it is a great help. Then on the Life subscription side, the contributions are £3 12s. od. per annum, and that brings in a total of £36 10s. od. to the Institution instead of the £25 4s. od.—the cost to the Member. In fact, with the present rate of tax, Covenanted subscriptions are a very great advantage to the Institution.

There is one other side I must refer to, and that is the question of our Lease. We have got twenty-four years to run. We tried to get the Commissioners of Crown Lands to grant us a new Lease for sixty years. They have replied that the extension of the lease for such a long term might involve future difficulties, so for the moment we are rather beaten on that point. What the Council will have to do as regards financial provision to meet this situation is being considered, and you will be informed in due course.

I think that is all I can say, but I can answer any questions put to me.

THE CHAIRMAN: Any questions to the Chairman of the Finance Committee?

(No questions.)

#### JOURNAL AND LIBRARY

THE CHAIRMAN: I will now take the Journal and Library Sections together, and I will ask Admiral Little to make any comments, or answer questions.

I much regret to inform you that Admiral Little has expressed his wish to retire from the Chairmanship of this Committee, and I feel the Institution owes him very grateful thanks for the work he has done in the past three years.

I will now ask him to speak on this subject.

ADMIRAL SIR CHARLES J. C. LITTLE: In regard to the Journal I have not anything really to add to the Minute at the top of page 5 of the Report. The lectures, of course, are the most important part of the Journal. We have been fortunate since the War in having a great deal of material and many distinguished officers—leaders in the War—to give us lectures; so I think it is quite natural that the Journal should, during these last two or three years, have been really above average. I think that has been realized, and the sales of the Journal have been very satisfactory, although they are decreased this year, as we rather expected, owing to the run-down of the Forces.

With so many new methods of warfare coming on, and one thing and another, I feel myself it should be possible for the future Journal Committee to keep the lectures up to the high standard that they are at present. My own view is that the lectures (and the Library too, of course) are one of the most important things for the Institution.

**THE CHAIRMAN:** Any questions on the Journal or the Library?

(No questions.)

#### MUSEUM

**THE CHAIRMAN:** I will pass on to the Museum section. Marshal of the Royal Air Force Sir Edward Ellington is Chairman of the Museum Committee and will reply to enquiries.

But before he makes a statement, I want to take the opportunity to refer to the work of the Uniforms Committee, which resumed its activities after the War under the Chairmanship of General Sir Charles Loyd. As you will be reading in your February JOURNAL, he has had to resign from that Committee on leaving London, but I should like to place on record our indebtedness to him for his help and interest in this important work.

We have been fortunate in securing Major-General R. G. Feilden, Vice-Quartermaster-General, as his successor.

His many friends and fellow-enthusiasts in the study of old uniforms will learn with deep regret of the death of a very active member of the Working Committee—Mr. Brennan, probably the greatest expert on Cavalry uniforms in the Country. He will be much missed.

I will now ask Marshal of the Royal Air Force Sir Edward Ellington to make his remarks.

**MARSHAL OF THE ROYAL AIR FORCE SIR EDWARD ELLINGTON:** The Museum is dealt with in this Report, and I have nothing to add to what is written there, but I shall be happy to answer any questions you may wish to put to me.

(No questions.)

It was then proposed by the Chairman and seconded by Brigadier J. A. Longmore (Chairman of the Finance Committee):

"That the Report and Accounts, as circulated, be taken as read, and adopted."

This Resolution was put to the Meeting and carried unanimously.

#### RE-ELECTION OF AUDITORS

**COMMANDER W. B. ROWBOTHAM, R.N.:** I propose:

"That Messrs. Barton, Mayhew & Company be re-elected Auditors for the ensuing year."

**CAPTAIN S. J. PARKER:** I will second that proposal.

This Resolution was carried, *nem. con.*

#### AMENDMENT TO BYE-LAW

**THE CHAIRMAN:** I now propose that the following amendment to Bye-Law, Chapter III, paragraph 2 (b), which has been duly posted in the Reading Room, be adopted:—

"COMPOSITION OF COUNCIL. The list of *ex officio* Members to be amended to include—

The Commandant of the Joint Services Staff College."

As you know, the Commandants of the three Services Colleges are already *ex-officio* Members of the Council. Since the War the Joint Services Staff College has been formed, and it is only proper that its Commandant should also be an *ex-officio* Member of the Council.

WING COMMANDER S. G. WALKER, R.A.F.: I should like to second the motion, and hope that it will help in this large question of inter-Service relations and exchange of information at high levels, not at the highest levels, but on the way to the top.

The Resolution was carried unanimously.

#### VACANCIES ON THE COUNCIL

##### ROYAL NAVY (1 vacancy)

THE CHAIRMAN: Admiral Sir Charles J. C. Little is due to retire, and I think the Admiral is prepared to offer himself for re-election.

A vote was taken by show of hands, and Admiral Little was unanimously re-elected to the Council.

#### THE TRENCH GASCOIGNE PRIZE ESSAY COMPETITION, 1947

THE CHAIRMAN: I will ask the Secretary to report the results of the Trench Gascoigne Prize Essay Competition.

THE SECRETARY: The subject for 1947 was "Discuss by what means the best of the nation's manhood can be attracted to a career in the Armed Forces of the Crown."

There were 22 entries. The First Prize of Thirty Guineas has been awarded to Wing Commander S. G. Walker, O.B.E., R.A.F.

THE CHAIRMAN presented the Prize to, and congratulated Wing Commander S. G. Walker amidst applause.

THE SECRETARY: The Council decided to award two Second Prizes of Fifteen Guineas each, one to Brigadier F. A. S. Clarke and the other to Major M. E. Bransby-Williams, Royal Artillery.

The Chairman presented the prizes to, and congratulated, Brigadier F. A. S. Clarke and Major M. E. Bransby-Williams amidst applause.

#### THE EARDLEY-WILMOT MEDAL COMPETITION, 1947

THE SECRETARY: The Eardley-Wilmot Medal Competition was established before the War under the bequest of the late Rear-Admiral Sir Sydney M. Eardley-Wilmot, and it is awarded for the best Essay on "Changes in Naval Warfare owing to new and modified weapons."

It has so happened that it has only been possible to hold one previous Competition, and until to-day only one Medal has been awarded. With the conclusion of the War it has been possible to start the Competition again.

There were three entries, and the Medal has been awarded to Lieutenant-Commander R. C. P. Wainwright, D.S.C., R.N.

The Chairman presented the Medal to Lieutenant-Commander Wainwright amidst applause.

THE CHAIRMAN: That finishes the Agenda. Are there any questions?

(No questions.)

Now Admiral Little will propose the Fourth Resolution.

#### VOTE OF THANKS TO THE CHAIRMAN

ADMIRAL SIR CHARLES J. C. LITTLE, G.C.B., G.B.E., C.B.: It is my privilege this afternoon to propose the fourth Resolution:

"That the thanks of the Meeting be accorded to the Chairman."

This Resolution was to have been put by Lord Newall but, I am sorry to say, he is indisposed to-day.

Members will recall that Sir Ronald Adam, about eighteen months ago, on giving up his work as Adjutant-General, became our Vice-Chairman, and in the normal course would have been our Chairman this year, but he joined the British Council and found he was unable to continue with the work here.

At that time the Field-Marshal was in America as Head of the Joint Staff Mission, and we communicated with him and persuaded him to take on this onerous post. However, he did not return to England until the Spring of last year, and at that time was rather reluctant to embark immediately on his Chairmanship. We persuaded him to do so, probably at some little inconvenience to himself. He took over his duties, I think, about June.

June till now is a very short year, and we have been very lucky as Members, and the Council have been very clever, in persuading the Field-Marshal to continue for another year.

Of course, with an officer of his experience and influence in the Chair, the activities of the Institution are in very safe hands, so that I feel you will all join with me in saying how much we appreciate his having agreed to stay on for this second year.

I have much pleasure in moving this Resolution.

AIR MARSHAL SIR JAMES M. ROBB, K.B.E., C.B., D.S.O., D.F.C., A.F.C.: I wish to second the resolution and endorse the remarks you have just heard from Admiral Little, and to add, on behalf of the Council, what pleasure it will give them, and to say too, what great benefit it will be to the R.U.S.I. as a whole to have Field-Marshal Lord Wilson as our Chairman.

I have much pleasure in seconding the Resolution.

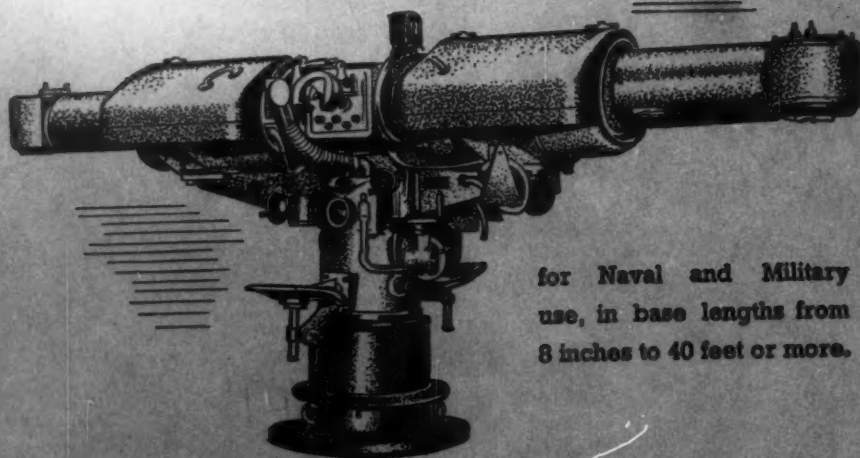
The Resolution was carried with acclamation.

THE CHAIRMAN expressed his thanks and the Meeting then terminated.



o  
t  
a  
o  
l  
l  
e  
s  
t  
s  
k  
e  
e  
n  
e  
n  
s  
s  
:  
a  
y  
l  
C  
p  
H  
ri  
ri  
li  
C  
—  
ra

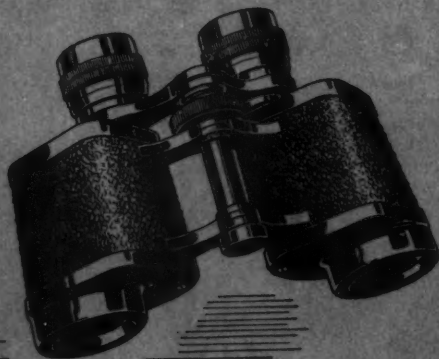
# RANGEFINDERS



for Naval and Military  
use, in base lengths from  
8 inches to 40 feet or more.

# BINOCULARS

of unsurpassed quality  
in light transmission.  
A wide range of  
types is available.



# BARR & STROUD LTD

ANNIESLAND, GLASGOW · 15 VICTORIA ST., LONDON, S.W.1

"The R.U.S.I. Journal" is published in February, May, August and November  
of each year.

Registered for Transmission to Canada by Canadian Magazine Post.

